Hampton Roads, Virginia Eight-Hour Ozone Maintenance Area

Regional Conformity Analysis

2040 Long Range Transportation Plan and FY 18-21 Transportation Improvement Program

FINAL REPORT

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Hampton Roads, Virginia
Eight-Hour Ozone Maintenance Area

Regional Conformity Analysis

for the

2040 Long Range Transportation Plan

and the

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ACRONYMS

BHP-hr	Brake-horsepower-hour
BPR	Bureau of Public Roads
BRT	Bus Rapid Transit
CAA	United States Clean Air Act, as amended
CFR	Code of Federal Regulations
DOT	United States Department of Transportation
EPA	United States Environmental Protection Agency
FHWA	Federal Highway Administration
FR	Federal Register
FTA	Federal Transit Administration
FY	Fiscal Year
g	grams
HCM	Highway Capacity Manual
HDDE	Heavy-Duty Diesel Engine
HDDV	Heavy-Duty Diesel Vehicle
HPMS	Highway Performance Monitoring System
HRPDC	Hampton Roads Planning District Commission
HRTPO	Hampton Roads Transportation Planning Organization
HRT	Hampton Roads Transit
I/M	Vehicle Emission Inspection and Maintenance Program
LRTP	Long Range Transportation Plan
MOVES	Motor Vehicle Emission Simulator (EPA emission model)
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NLEV	National Low Emission Vehicle Program
NO_X	Nitrogen Oxides
psi	Pounds per square inch
RFG	Reformulated Gasoline
RVP	Reid Vapor Pressure
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SIP	State Implementation Plan (for air quality)
SPS	Statewide Planning System
STIP	State Transportation Improvement Program
TAZ	Traffic Analysis Zone
TCM	Transportation Control Measure
TEA-21	Transportation Equity Act for the 21st Century
TIP	Transportation Improvement Program
TSD	Technical Support Document (for SIPs or SIP revisions)
V/C	Volume-to-Capacity (Ratio)
VAC	Virginia Administrative Code
VDEQ (or DEQ)	Virginia Department of Environmental Quality
VDOT	Virginia Department of Transportation
VDRPT	Virginia Department of Rail and Public Transportation
VEC	Virginia Employment Commission
VHT	Vehicle Hours of Travel
VMT	Vehicle Miles of Travel
VOC	Volatile Organic Compounds
VRS	Vapor Recovery System
WATA	Williamsburg Area Transportation Authority

Executive Summary

This report presents the regional conformity analysis and recommendation for a finding of conformity for the amended Hampton Roads 2040 Long Range Transportation Plan (LRTP, or "Plan") and Fiscal Year (FY) 2018-2021 Transportation Improvement Program (TIP, or "Program"). The amended LRTP and TIP were developed by the Hampton Roads Transportation Planning Organization (HRTPO), which serves as the designated Metropolitan Planning Organization (MPO) for the Hampton Roads region[1]. The conformity analysis was conducted in compliance with the federal transportation conformity rule (40 CFR Parts 51 and 93)[2,3] and the corresponding state transportation conformity regulation (9 VAC 5-151)[4].

As summarized in Exhibit ES-1, the LRTP and TIP meet all applicable federal and state conformity requirements and criteria[5]. A recommendation for a finding of conformity is therefore made, conditional upon any further and separate review as may be required by the US Department of Transportation (US DOT) for the fiscal constraint criterion consistent with Section 93.108[6] of the federal conformity rule and the requirements of the federal planning rule specified at 23 CFR Part 450[7].

Supporting information for each of these criteria demonstrations is provided below, following a summary of the current status of the region with regard to air quality. For context, an overview of the applicable regulatory requirements is also provided.

Hampton Roads Air Quality Planning Status

On June 1, 2007, the United State Environmental Protection Agency (EPA) via Federal Register notice approved a re-designation request and State Implementation Plan (SIP)

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1 See: http://www.hrtpo.org

2 Federal Transportation Conformity Regulations (EPA Website): https://www.epa.gov/state-and-local-transportation

3 On February 16, 2018, a DC Circuit Court of Appeals decision (No. 15-1115, South Coast Air Quality Management District, Petitioner v. Environmental Protection Agency, et al., Respondents) addressed the 2015 revocation by EPA of the 1997 ozone NAAQS and reinstated associated conformity requirements across the nation. EPA has since submitted a petition for rehearing, to which the court has not responded as of the time of preparation of this analysis. Unless and until there are further court decisions changing federal conformity requirements associated with the previously revoked 1997 ozone NAAQS, this analysis is proceeding assuming that they along with associated state conformity requirements are again in effect. See: https://www.cadc.uscourts.gov/internet/opinions.nsf/217B6778AE3EC89C8525823600532AE0/$file/15-1115-1718293.pdf

4 Virginia Regulation for Transportation Conformity (9 VAC5-151): https://law.lis.virginia.gov/admincode/title9/agency5/chapter151/

5 Federal Conformity Rule, 40 CFR 93.109 (*Criteria…*). See "*Table 1 - Conformity Criteria*": http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.109.htm

6 Federal Conformity Rule, 40 CFR 93.108 Fiscal Constraints for Transportation Plans and TIPs: https://www.gpo.gov/fdsys/pkg/CFR-2015-title40-vol20/xml/CFR-2015-title40-vol20-sec93-108.xml

7 US DOT - Federal Highway Administration, 23 CFR Parts 450 and 771, and Federal Transit Administration, 49 CFR Part 613, *Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning; Final Rule.* Final Rule effective June 27, 2016. See: https://www.gpo.gov/fdsys/pkg/FR-2016-05-27/html/2016-11964.htm. For reference, the FHWA also provides a compilation of transportation-related legislation, regulations and guidance on their website: https://www.fhwa.dot.gov/hep/guidance/index.cfm.

revision (maintenance plan) that had been submitted by the Virginia Department of Environmental Quality (VDEQ)[8]. EPA also found adequate and approved motor vehicle emission budgets for ozone precursors (nitrogen oxides or NO_x, and volatile organic compounds, or VOC) as specified in the maintenance plan. Pursuant to the requirements of the federal conformity rule, the maintenance plan budgets must be met in all regional conformity analyses for the Hampton Roads area[9].

Exhibit ES-1: Conformity Analysis Summary*

Section	Criteria	Demonstrated:
93.108	Fiscal constraint	Yes**
93.110	Latest planning assumptions	Yes
93.111	Latest emissions model	Yes
93.112	Consultation	Yes***
93.113(b) & (c)	TCMs	na****
93.118	Emissions Budget	Yes

* *As specified in 40 CFR 93.109, "Table 1 – Conformity Criteria", with the addition of fiscal constraint as required in Section 93.108. Additional requirements apply, e.g. as specified in 93.122, although not specifically listed above.*

** *As indicated by MPO (HRTPO) approval and/or provision of the project list(s) for the Plan and Program and the supporting information provided with those documents, and subject to federal review consistent with 23 CFR Part 450 as referenced in the conformity rule in Section 93.108.*

*** *Conducted to meet both state and federal requirements.*

**** *The maintenance plan for Hampton Roads (72 FR 30490, effective June 1, 2007) does not include transportation control measures (TCMs), which therefore are not required for the conformity analysis or determination.*

Following that action by EPA in 2007, Hampton Roads was made attainment (maintenance) of the 1997 eight-hour ozone national ambient air quality standard (NAAQS) while remaining attainment of all of the other applicable NAAQS. The designated maintenance area included the Counties of Gloucester, Isle of Wight, James City, and York, and the Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg.

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[8] US EPA, 72 FR 30490, 40 CFR Parts 52 and 81 [EPA–R03–OAR–2006–0919; FRL–8320–9], Approval and Promulgation of Air Quality Implementation Plans; Virginia; Re-designation of the Hampton Roads 8-Hour Ozone Nonattainment Area to Attainment and Approval of the Area's Maintenance Plan and 2002 Base-Year Inventory, Final Rule, effective June 1, 2007. See: http://edocket.access.gpo.gov/2007/E7-10581.htm.

[9] The February 2018 court ruling referenced earlier may not necessarily be interpreted to mean that maintenance status or the 2007 maintenance plan has been re-imposed on the region, notwithstanding the reinstatement of conformity requirements that would normally only apply for nonattainment or maintenance areas under the federal transportation conformity rule. Note that the rule at 40 CFR 93.102(b) states that: "*The provisions of this subpart shall apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan".* In effect, the conformity analysis is being conducted as if the region was again in maintenance and the 2007 maintenance plan applies again, although neither is specifically stated in the February 2018 court ruling.

Regulatory Requirements Overview

Conformity means, as indicated in Section 176(c) of the Clean Air Act (CAA)[10] as amended:

> *"(A) conformity to an [air quality] implementation plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and*
>
> *(B) that such activities will not— (i) cause or contribute to any new violation of any standard in any area; (ii) increase the frequency or severity of any existing violation of any standard in any area; or (iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area. …"*

Section 176(c)(4)(B) of the CAA requires regulatory action in the form of criteria and procedures for conformity to be promulgated by EPA in concurrence with the US DOT:

> *"176(c)(4)(B) Transportation plans, programs, and projects.— The Administrator, with the concurrence of the Secretary of Transportation, shall promulgate, and periodically update, criteria and procedures for demonstrating and assuring conformity in the case of transportation plans, programs, and projects."*

The federal conformity rule was initially promulgated in 1993 and has been amended a number of times since. The most current compilation is that produced by EPA in April 2012[11]. Under the federal rule, MPOs, state departments of transportation and the FHWA along with the FTA are responsible for conformity determinations for: (1) LRTPs, (2) TIPs, (3) transportation projects that receive federal funding or require FHWA or FTA approval, and (4) regionally significant non-federal projects, if these actions occur in areas that have been designated by EPA as nonattainment or maintenance areas for any of the criteria pollutants.

The federal conformity rule at 40 CFR Part 51 effectively requires certain conformity requirements, primarily addressing consultation, be enacted in state regulation. Accordingly, the VDEQ in 1997 developed the Virginia *Regulation for Transportation Conformity*, which is specified in the Virginia Administrative Code (VAC) at 9 VAC 5-151 (as previously referenced). The Virginia regulation closely reflects the requirements of the federal rule for inter-agency and public consultation, and was assumed in effect for this analysis[12].

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[10] *Clean Air Act* (and amendments): https://www.epa.gov/clean-air-act-overview

[11] US EPA, *Transportation Conformity Regulations as of April 2012*, EPA-420-B-12-013, April 2012, available at:https://www.epa.gov/state-and-local-transportation/current-law-regulations-and-guidance-state-and-local-transportation .

[12] On February 22, 2018, shortly after the previously referenced February 16, 2018 court decision was issued, an EPA final rule was published in the federal register, stating in part that "*EPA is approving … revisions updating the Virginia SIP to reflect the revocation of the 1997 ozone NAAQS in accordance with the requirements of the Clean Air Act (CAA)*". Given the court decision, this conformity analysis is proceeding as if the Virginia conformity SIP requirements related to the 1997 ozone NAAQS still apply. See: https://www.gpo.gov/fdsys/pkg/FR-2018-02-22/pdf/2018-03524.pdf

Demonstrations of conformity are therefore conducted to meet the general objectives given in the CAA by satisfying the technical criteria and requirements specified in federal and state regulations. Consultation is conducted to meet federal, state and local requirements for inter-agency and public consultation.

Conformity Criteria Assessments

Summary assessments are presented below for each of the key conformity criteria listed in Exhibit ES-1, which includes not only the specific criteria identified for regional conformity analyses in Section 93.109[13] of the federal rule (namely, those specified in sections 93.110 through 93.113, and 93.118) but also fiscal constraint from Section 93.108 of that rule. However, as revenues and project costs are not generally assessed in air quality conformity analyses but are instead assessed as required with the associated Plan and TIP, the fiscal constraint criterion effectively serves as a pre-requisite for the conformity analysis and determination. More detail and supporting information on the technical criteria and assessments are provided in the main report.

- *Section 93.108 (Fiscal Constraints for Transportation Plans and TIPs)*[14]: The federal conformity rule states: "*Transportation plans and TIPs must be fiscally constrained consistent with [US] DOT's planning regulations at 23 CFR part 450 in order to be found in conformity.*"

  For Hampton Roads, the MPO (HRTPO) addresses fiscal constraint in the development of the Plan and Program as appropriate and typically includes specific sections or chapters addressing revenues, cost estimates, and financial constraint with those documents. For the purposes of this conformity demonstration, therefore, fiscal constraint is indicated by HRTPO provision and/or approval of the project lists for the Plan and Program and the supporting information referenced by those documents.

  A recommendation for a finding of conformity is therefore conditional upon any further and separate review as may be required by the US DOT for the fiscal constraint criterion consistent with Section 93.108 of the federal conformity rule as well as requirements of federal planning regulations specified at 23 CFR Part 450.

- *Section 93.110 (Latest Planning Assumptions)*[15]: All requirements for the application of latest planning assumptions were met as follows.

  - 93.110(a) Latest Planning Assumptions: This section requires that: "*the conformity determination … must be based upon the most recent planning assumptions in force at the time the conformity analysis begins...*"

    In general, the latest available and approved population and employment forecasts by Traffic Analysis Zone (TAZ) were employed with the regional

[13] Federal Conformity Rule, 40 CFR 93.109 ("Criteria…"). See "*Table 1 - Conformity Criteria*": http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.109.htm

[14] Federal Conformity Rule, 40 CFR 93.108 Fiscal Constraints for Transportation Plans and TIPs: http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.108.htm

[15] Federal Conformity Rule, 40 CFR 93.110 Criteria and Procedures: Latest Planning Assumptions http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.110.htm

travel demand network model to generate the traffic volume and vehicle-miles-traveled (VMT) forecasts applied in this conformity analysis. Regional roadway and transit networks were updated as appropriate using the Plan and Program project lists, which were subjected to interagency consultation as described below. Emission controls assumed for the analysis were consistent with those specified in the applicable implementation (maintenance) plan revision.

All of the latest planning assumptions and other aspects of the conformity analysis were reviewed by the Hampton Roads Interagency Consultation Group (ICG) at the beginning of the conformity analysis process, as documented in the chapter on consultation and in Appendix D. Additional details are provided below.

- 93.110(b) Socioeconomic Forecasts: This section requires that "*Assumptions must be derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO or other agency authorized to make such estimates and approved by the MPO*". Further, Section 93.122(b)(1)(ii) requires that "*Land use, population, employment, and other network-based travel model assumptions must be documented and based on the best available information*". Section 93.122(b)(1)(iii) adds that "*Scenarios of land development and use must be consistent with the future transportation system alternatives for which emissions are being estimated.*"

  As documented in the main report, the socioeconomic forecasts (including interim years and sub-allocations as appropriate) represent the latest projections available and approved for use with the LRTP. The Regional Economic Models, Inc. (REMI) econometric model was applied to develop control totals for key parameters such as population and employment for the Hampton Roads area. The HRTPO then sub-allocated the regional control totals to the local or jurisdiction level. The sub-allocations were reviewed by each locality and adjustments made where appropriate.

- 93.110(c) and (d) Transit: These sections respectively require that "*The conformity determination for each transportation plan and TIP must discuss how transit operating policies (including fares and service levels) and assumed transit ridership have changed since the previous conformity determination*" and "*The conformity determination must include reasonable assumptions about transit service and increases in transit fares and road and bridge tolls over time*".

  Transit operating policies (including fares and service levels) and modeling for transit (ridership) have not changed significantly since the previous conformity determination [40 CFR 93.110(c) and (d)]. Light rail service is included in the modeling networks. Transit service and fares as well as road and bridge tolls are addressed in more detail in supporting documentation for the Plan and associated modeling. While future transit ridership is effectively determined in the course of modeling for the conformity analysis, details on current transit operating policies including fares and service levels may be

found on the Hampton Roads Transit (HRT), Williamsburg Area Transportation Authority (WATA), and Suffolk Transit websites[16].

In brief, local transit fares have not changed significantly since the last conformity analysis for either HRT or WATA. Suffolk Transit is a new transit provider that began service since the last conformity analysis.

- For HRT, the current single ticket fare for local bus and the TIDE light rail service is $2.00; for seniors (60 and over) and the disabled, a reduced fare of $1.00 applies. A day pass (the Go Pass) which was introduced in 2008 is $4.50 for a one-day pass. In keeping with the Americans with Disabilities Act (ADA), door-to-door service is also available for Certified Paratransit Users for no fee.
- For WATA, the fare for a one-way trip is $1.50; for seniors (60 and over) and disabled, a reduced fare of $0.75 applies. An all-day pass (for unlimited trips) is also available for a fare of $3.00. In keeping with the ADA, door-to-door service is also available for those unable to use bus at a fare of $3.00 per one-way trip.
- For Suffolk Transit, the fare for a one-way trip is $1.50; for seniors (55 and over) and disabled, a reduced fare of $0.75 applies. An all-day pass (for unlimited trips) is also available for a fare of $3.00. In keeping with the ADA, door-to-door service is also available for those unable to use bus at a fare of $3.00 per one-way trip.

Finally, express bus service modeling includes the "Max" service, with fares currently $4.00 one-way, converted to constant 2009 dollars.

- 93.110(e) Transportation Control Measures (TCMs) and Other Measures: This section requires that "*The conformity determination must use the latest existing information regarding the effectiveness of the TCMs [transportation control measures] and other implementation plan measures which have already been implemented.*"

  The applicable SIP revision (maintenance plan) for Hampton Roads does not include transportation control measures (TCMs). TCMs are therefore not required for the conformity analysis or determination. Accordingly, credit for TCMs was not taken in this analysis. See 72 FR 30490, effective June 1, 2007.

  Other measures applicable for on-road motor vehicles as listed in the applicable implementation (maintenance) plan include *Tier 2/Low Sulfur Gasoline Rule*, *2007 On Road Diesel Engine Rule*, and *Reformulated gasoline (on-road)*[17]. Other or associated measures implemented in the

[16] See https://gohrt.com/, http://gowata.org/ and http://www.suffolkva.us/429/Suffolk-Transit respectively.

[17] VDEQ, Maintenance Plan for the Hampton Roads Nonattainment Area Consisting of the Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Suffolk, Virginia Beach, and Williamsburg and the Counties of James City, York, Gloucester, and Isle of Wight - Final, ca October 2006. See Table 5.2.2-1 (Maintenance Plan Control Measures and Emission Reductions) on page 8. The Technical Support Document (TSD) for the maintenance plan lists the same measures under slightly different headings, namely the *Federal Tier 2/Low Sulfur Gasoline Rule*, *Federal Heavy Duty Diesel Engine Rule*, and *Reformulated Gasoline (On-Road)*. See: VDEQ, *Technical Support Document for the Re-designation Request and Maintenance Plan for Hampton Roads 8-hour Ozone Nonattainment Area - Final*, ca October 2006, Table 8-1 (*Maintenance Plan Control Measures and Emission Reductions*), p.282.

region and documented in this report include gasoline Reid Vapor Pressure (RVP) limits and early implementation of the National Low Emission Vehicle (NLEV) Program. Additionally, Tier 3 emission standards as incorporated by EPA into the current version of the MOVES model were included. All of these measures have been implemented and therefore credited in this analysis as appropriate.

Further, and though not specified in the implementation plan, other measures have been implemented that have or may have the effect of reducing emissions. Credit for these measures was not needed to demonstrate conformity and was therefore not taken for this analysis. These measures include transit bus replacements, Congestion Mitigation and Air Quality (CMAQ) funded projects, van pools, and park-and-ride lots.

- 93.110(f) Consultation on Key Assumptions: This section requires that "*Key assumptions shall be specified and included in the draft documents and supporting materials used for the interagency and public consultation required by Sec. 93.105*".

  Consultation was conducted on all key assumptions in accord with both federal and state regulations, as documented below in the summary on consultation.

- *Section 93.111 (Latest Emissions Model)*[18]. Requirements to apply the latest emission model were satisfied using MOVES2014a for this conformity analysis. The use of the latest emission model is specified in the federal conformity rule at 93.111(a) as follows: "*The conformity determination must be based on the latest emission estimation model available.*"

  The selection of latest emission model for the conformity analysis was considered by the ICG at the beginning of the conformity analysis process, as documented in the chapter on consultation and in Appendix D.

- *Section 93.112 (Consultation)*[19]: Regulatory requirements for consultation that were initially established at the federal level have been reflected in state regulations and requirements as well as locally developed inter-agency and public consultation procedures. Exhibit ES-2 presents an overview of applicable federal, state and local consultation requirements.

  Federal Regulation: Federal requirements for consultation as specified in the conformity rule in Section 93.105 were made subject in Section 93.112 to the establishment and approval by EPA of corresponding state requirements, as follows: "*Conformity must be determined according to the consultation procedures in this subpart and in the applicable implementation plan, and according to the public involvement procedures established in compliance with 23 CFR part 450. Until the implementation plan revision required by §51.390 of this chapter is fully approved by EPA, the conformity determination must be*

[18] Federal Conformity Rule, 40 CFR 93.111 Criteria and Procedures: Latest Emissions Model http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.111.htm

[19] Federal Conformity Rule, 40 CFR 93.112 Criteria and Procedures: Consultation http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.112.htm

made according to §93.105 (a)(2) and (e) and the requirements of 23 CFR part 450."

Exhibit ES-2: Federal, State and Local Consultation Requirements Relating to Transportation Conformity

DATE	REQUIREMENT
PENDING	
Update to Inter-Agency Consultation Procedures for Transportation Conformity	Update for the existing (2005) Hampton Roads Conformity Consultation Procedures, both to better reflect the Virginia Conformity SIP *(Regulation for Transportation Conformity*, 9 VAC 5-151) and to streamline and update existing processes as appropriate.
CURRENTLY APPLICABLE OR APPROVED	
Federal	***Legislation & Regulations***
US EPA Regulation for Transportation Conformity (40 CFR Parts 51 and 93) *Key requirements for consultation are addressed in Sections 51.390, 93.105, and 93.112.*	
April 13, 2012	*Transportation Conformity Regulations as of April 2012* (EPA-420-B-12-013). This is the most current compilation by EPA of the Federal Transportation Conformity Rule (40 CFR Parts 51 and 93). It reflects all amendments made since the initial issuance by EPA of the rule in 1993. See: https://www.epa.gov/state-and-local-transportation/current-law-regulations-and-guidance-state-and-
US DOT Planning Assistance and Standards (23 CFR Part 450)(Transportation Planning & Programming Requirements) *Key requirements for consultation are addressed in Section 450.316 Interested parties, participation, and consultation.*	
June 27, 2016	US DOT - Federal Highway Administration, 23 CFR Parts 450 and 771, and Federal Transit Administration, 49 CFR Part 613, *Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning*; Final Rule. Final Rule effective June 27, 2016. See: https://www.gpo.gov/fdsys/pkg/FR-2016-05-27/html/2016-11964.htm. Most recent major update to the federal planning regulations.
	For reference, the FHWA also provides a compilation of transportation-related legislation, regulations and guidance on their website: https://www.fhwa.dot.gov/hep/guidance/index.cfm
Legislation - Federal Reauthorization, and the Clean Air Act as amended	
December 4, 2015	Federal Reauthorization - *Fixing America's Surface Transportation (FAST) Act* (Public Law No. 114-94). See: https://www.fhwa.dot.gov/fastact/legislation.cfm
November 15, 1990	Last set of major amendments to the *Clean Air Act*, although there have been minor amendments since. Conformity is addressed in Section 176(c).
State	***Federally-Required State Regulation for Transportation Conformity (9 VAC 5-151)***
-	Virginia *Regulation for Transportation Conformity* (9 VAC 5-151)*. See: https://law.lis.virginia.gov/admincode/title9/agency5/chapter151/
Local	***Consultation Procedures***
Public Participation Plan	
February 2018	MPO (HRTPO) approval of the *Hampton Roads Transportation Planning Organization Public Participation Plan*. This document responds to public and consultation stakeholder requirements specified in 23 CFR Part 450. See: https://www.hrtpo.org/page/public-participation-plan/
Inter-Agency Consultation Procedures for Transportation Conformity	
September 21, 2005	MPO (HRTPO) approval of (Inter-Agency) *Consultation Procedures for the Hampton Roads Ozone Nonattainment Area in Support of the Transportation Conformity Regulations (Revised July 18, 2005).* This revision updated the initial version approved in July 2001. These procedures were developed in response to requirements of the federal conformity rule at 40 CFR 93.105.

** On February 22, 2018, EPA published a final rule in the federal register, stating in part that "EPA is approving … revisions updating the Virginia SIP to reflect the revocation of the 1997 ozone NAAQS in accordance with the requirements of the Clean Air Act (CAA)".*
See: https://www.gpo.gov/fdsys/pkg/FR-2018-02-22/pdf/2018-03524.pdf

The referenced section, 51.390, of the federal transportation conformity rule effectively requires the development of a state regulation to govern conformity consultation processes and further provides that the state regulation once approved by EPA effectively governs (over the federal) where they overlap. Section 51.390c provides that: *"Timing and approval... Following EPA approval of the state conformity provisions (or a portion thereof) in a revision to the state's conformity implementation plan, conformity determinations will be governed by the approved (or approved portion of the) state criteria and procedures as well as any applicable portions of the federal conformity rules that are not addressed by the approved conformity SIP."*

Commonwealth of Virginia Regulation: The Virginia "*Regulation for Transportation Conformity*" (9 VAC 5-151) satisfies these requirements and is therefore the governing regulation for consultation for conformity purposes for the Commonwealth.

Although the Virginia regulation generally mirrors the federal with regard to specific consultation requirements, one difference is that the Virginia regulation requires that the Lead (or Local) Planning Organization (LPO) for air quality planning that has been established for the region pursuant to Section 174 of the federal Clean Air Act as amended specifically be included in consultation for conformity purposes. The Hampton Roads Air Quality Committee (HRAQC) is the designated LPO for the region, and the involvement of the VDEQ staff representative (or their designate) for that Committee in the local inter-agency consultation process for conformity is considered to fulfill that requirement.

Hampton Roads Procedures: Both inter-agency and public consultation procedures have been established for Hampton Roads. Inter-agency consultation procedures for conformity were approved in 2005[20]. An Interagency Consultation Group (ICG) has been established that includes representatives of member agencies of the HRTPO, Virginia Department of Rail and Public Transportation (VDRPT), VDOT, FHWA, FTA, VDEQ, Hampton Roads Air Quality Committee (HRAQC), and the US EPA. The HRAQC, typically represented by the VDEQ representative at ICG meetings as needed, serves as the Local Planning Organization (LPO) for the region. All meetings are open to the public.

Public consultation for the LRTP, TIP and conformity is conducted following the procedures presented in the "*Public Participation Plan*" (PPP)[21]. The PPP responds to federal requirements as implemented with the revised planning regulations (23 CFR Part 450).

The main report includes a summary of all applicable federal, state and local consultation requirements as well as a record of inter-agency and public

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[20] VDOT, *Consultation Procedures for the Hampton Roads Ozone Nonattainment Area in Support of the Transportation Conformity Regulations*, Revised July 18, 2005. See: https://www.hrtpo.org/uploads/docs/Rev_HR_ICP2005.pdf

[21] Hampton Roads TPO, *Public Participation Plan*, February 2018 https://www.hrtpo.org/page/public-participation-plan/

consultation activities conducted in support of this analysis. The consultation record is also summarized below.

Interagency and public consultation opportunities relating to this conformity analysis, including the prior development of project lists, were provided at the following meetings and events:

Consultation Record *(italicized for upcoming events)*

- June 6, 2018: The ICG meeting was held as part of the regularly-scheduled HRTPO Transportation Technical Advisory Committee (TTAC) meeting.
  - The TTAC, acting on behalf of the HRTPO, approved the project list for the 2040 LRTP & 18-21 TIP and also the date for the August TTAC meeting at which the draft regional conformity analysis is scheduled to be presented. HRTPO and TTAC meetings are open to the public, with email announcements (including public notices) and agendas posted the week before the meeting. An opportunity for public input was provided at the beginning of the TTAC meeting; no comments from the public were received related to the ICG meeting.

  - The ICG meeting marked the beginning of the conformity analysis process. This meeting provided an opportunity for detailed review and comment on all aspects of the proposed analysis, including models, associated methods and assumptions, the project list for the LRTP and TIP, and overall schedule, as well as an update to the ICG to formally include the HRAQC and the Hampton Roads District as members.

    Exhibit ES-3 lists the agencies represented in the Hampton Roads ICG. The membership includes all parties identified in the both the federal and state conformity regulations and is consistent with the requirements given in the 2005 Conformity Consultation Procedures for Hampton Roads.

    An advance notice of the ICG meeting notice was distributed by email. The presentation given at the ICG meeting included a review of the membership list (including the addition of the HRAQC, and designation of the VDEQ representative to serve as the HRAQC representative as needed), selection of the latest emission model for the analysis, modeling methodology and assumptions (including the selection of socioeconomic forecasts to meet latest planning assumption requirements), the project list to be applied in the conformity analysis for the Plan and TIP, and the conformity analysis schedule.

    Comments received from the ICG are documented in the minutes for the meeting, which are referenced below and copied in Appendix D. Based on a request, the VDOT Hampton Roads District was added as an ICG member (in addition to HRAQC).

    Copies of all materials distributed for the ICG Meeting are provided in Appendix D, with the exception of the project list for the Plan and TIP which is presented separately (for convenient reference) in Appendix E. Appendix D includes the meeting agenda, membership list, draft modeling methodology and assumptions (draft chapter of conformity analysis

report), draft conformity analysis schedule, presentation (PowerPoint slides), and email/website notices.

Exhibit ES-3: Hampton Roads Interagency Consultation Group (ICG)

Agency	*Member*	*Alternate*
City/County		
City of Chesapeake	Earl Sorey	Steve Froncillo
City of Hampton	John Yorks	Michael Hayes
City of Newport News	Jacqueline Kassel	Bridjette Parker
City of Norfolk	Jeffrey Raliski	
City of Poquoson	Dannan O'Connell	Deborah Vest
City of Portsmouth	James Wright	
City of Suffolk	Robert Lewis	Sherry Earley
City of Virginia Beach	Brian Solis	Tara Reel
City of Williamsburg	Carolyn Murphy	Aaron Small
Gloucester County	Carol Rizzio	Anne Ducey-Ortiz
Isle of Wight County	Richard Rudnicki	
James City County	Paul Holt	Tammy Rosario
York County	Timothy Cross	
Regional		
Hampton Roads Transportation Planning Organization	Dale Stith	Theresa Brooks
Hampton Roads Transit	Jamie Jackson	Keisha Branch
Williamsburg Area Transit Authority	Josh Moore	Barbara Creel
Hampton Roads Air Quality Committee (HRAQC)	*VDEQ Proxy**	
State		
Virginia Dept. of Environmental Quality*	Sonya Lewis-Cheatham	
Virginia Dept. of Rail & Public Transportation	Jennifer DeBruhl	Chris Arabia
Virginia Dept. of Transportation – C/O Environmental	Jim Ponticello	Christopher Voigt
Virginia Dept. of Transportation – C/O Planning	Peng Xiao	
Virginia Dept. of Transportation – HR District Planning	Eric Stringfield	Ray Hunt
Federal		
Environmental Protection Agency	Gregory Becoat	
Federal Highway Administration	Ivan Rucker	
Federal Transit Administration	Melissa McGill	
Non-Voting		
US Navy	Rhonda Murray	

** The VDEQ representative also serves as the HRAQC/LPO representative as needed.*

- *August 1, 2018: TTAC approval (on behalf of the HRTPO) of the draft Conformity Analysis and proposed finding of conformity for the 2040 LRTP and FY 2018-2021 TIP, subject to no adverse comments received during the associated public review period that would require their review.*

  Draft minutes (including attachments and an updated ICG Membership list) for the June TTAC/ICG meeting were distributed for comment as part of the TTAC agenda.

- *August 1-15, 2018: Fourteen-day public review period on the draft Regional Conformity Analysis and proposed finding of conformity. A public notice with links to copies of the draft Conformity Analysis and its Executive Summary was posted on the HRTPO website.*

- *August 29, 2018: HRTPO approval of the draft Conformity Analysis and finding of conformity.*

- *Section 93.113 (Timely Implementation of TCMs)*[22]: As indicated previously under "Latest Planning Assumptions", the applicable SIP revision (maintenance plan) for Hampton Roads does not include transportation control measures (TCMs). TCMs are therefore not required for the conformity analysis or determination. See 72 FR 30490, effective June 1, 2007.

- *Section 93.118 (Motor Vehicle Emissions Budget)*[23]: Requirements of the federal conformity rule with regard to the applicable motor vehicle emission budgets were met as follows:

  (a) The transportation plan, TIP… must be consistent with the motor vehicle emissions budget(s) in the applicable implementation plan... This criterion is satisfied if it is demonstrated that emissions of the pollutants …are less than or equal to the motor vehicle emissions budget(s)..."

  Exhibit ES-4 lists the motor vehicle emission budgets as specified in the 2007 maintenance plan. Budgets were specified for both nitrogen oxides (NO_x) and for volatile organic compounds (VOC), which are precursors to ozone formation.

Exhibit ES-4: Motor Vehicle Emission Budgets for Hampton Roads

ADEQUATE AND APPROVED MOTOR VEHICLE EMISSIONS BUDGETS (MVEBS) IN TONS PER DAY (TPD)

Budget year	NO_x	VOC
2011	50.387	37.846
2018	31.890	27.574

Source: Excerpted from 72 FR 30490, effective June 1, 2007.

Exhibit ES-5 presents the emission forecasts for the LRTP and TIP in comparison to the specified motor vehicle emission budgets. The forecast emissions are less than the corresponding budgets established in the maintenance plan for each pollutant and year tested. The emission tests required by the federal conformity rule are therefore passed.

(b) "Consistency with the motor vehicle emissions budget(s) must be demonstrated for each year for which the applicable (and/or submitted) implementation plan specifically establishes motor vehicle emissions budget(s), for the attainment year (if it is within the timeframe of the transportation plan and conformity determination), for the last year of the timeframe of the conformity determination …, and for any intermediate years within the timeframe of the conformity determination as necessary so that the

[22] Federal Conformity Rule, 40 CFR 93.113 Criteria and Procedures: Timely Implementation of TCMs http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.113.htm

[23] Federal Conformity Rule, 40 CFR 93.118 Criteria and Procedures: Motor Vehicle Emissions Budget http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.118.htm

years for which consistency is demonstrated are no more than ten years apart … "

Exhibit ES-5: Conformity (Emission Budget) Tests

Year	Regional Emissions (tons per average ozone season weekday)	
	NO_x	VOC
2018 Budget Year		
Network & Off-Network	*30.868*	*20.609*
Miltary Base	*0.52*	*0.26*
TOTAL FORECAST:	31.388	20.869
Budget:	31.890	27.574
Conformity Test:	PASSED	PASSED
2028 Interim Year (within ten years of other years modeled)		
Network & Off-Network	*12.555*	*11.399*
Miltary Base	*0.52*	*0.26*
TOTAL FORECAST:	13.075	11.659
Budget:	31.890	27.574
Conformity Test:	PASSED	PASSED
2030 Interim Year (within ten years of other years modeled)		
Network & Off-Network	*10.423*	*10.032*
Miltary Base	*0.52*	*0.26*
TOTAL FORECAST:	10.943	10.292
Budget (from 2018):	31.890	27.574
Conformity Test:	PASSED	PASSED
2040 LRTP Horizon Year		
Network & Off-Network	*6.946*	*7.348*
Miltary Base	*0.52*	*0.26*
TOTAL FORECAST:	7.466	7.608
Budget (from 2018):	31.890	27.574
Conformity Test:	PASSED	PASSED

** Budgets specified in 72 FR 30490, effective June 1, 2007, with military base contributions from Table 4-7, p. 62, in the TSD for the referenced Maintenance Plan.*

The motor vehicle emission budget tests were satisfied for each pollutant and year modeled, as noted above. The years modeled were selected as follows:

- 2018 is a year for which motor vehicle emission budgets are specified in the applicable implementation plan revision (maintenance plan) referenced above, which was selected as the federal conformity rule requires that years for which budgets are established must be modeled.
- 2040 is the horizon year for the LRTP, which the federal conformity requires to be modeled.
- 2028 and 2030 satisfy the interim year requirement specified in the federal conformity rule, namely that analysis years be no more than ten years apart.

Since the federal conformity rule requires that motor vehicle budgets established "for the most recent prior year" apply for years for which budgets have not been "specifically established", the 2018 budgets as listed are also applicable for the subsequent test years (2028, 2030 and 2040).

(c) "Consistency with the motor vehicle emissions budget(s) must be demonstrated for each pollutant or pollutant precursor …for which the area is in nonattainment or maintenance and for which the applicable implementation plan (or implementation plan submission) establishes a motor vehicle emissions budget",

The motor vehicle emission budget tests were satisfied for each pollutant and year modeled, as noted above. The pollutants modeled (NO_x and VOC precursors to ozone) were ones for which motor vehicle emission budgets were specified in the 2007 maintenance plan for the eight-hour ozone standard) as noted above.

(d) "Consistency with the motor vehicle emissions budget(s) must be demonstrated by including emissions from the entire transportation system, including all regionally significant projects contained in the transportation plan and all other regionally significant highway and transit projects expected in the nonattainment or maintenance area in the timeframe of the transportation plan… "

The motor vehicle emission budget tests were satisfied for each pollutant and year modeled, as noted above. Emissions from the entire transportation system, including "all regionally significant projects contained in the transportation plan and all other regionally significant highway and transit projects expected in the maintenance area in the timeframe of the transportation plan", were included in the analysis. For this purpose, separate emission forecasts were generated for motor vehicle traffic on network and off-network facilities and military bases.

Network emissions are those attributable to travel on roadways included in the regional travel demand (network) model. This includes all existing regionally significant roadway facilities and transit service as well as all regionally significant roadway projects and transit services planned to be open or operational by each year modeled. Estimates for emissions

attributable to travel on network facilities were generated for each year modeled for the conformity analysis.

Off-network emissions are those attributable to travel on local roads that are not typically included in the regional travel demand network model. Estimates for off-network emissions were also generated for each year modeled for the conformity analysis.

Exhibit ES-6 presents the estimated emissions for on-road motor vehicles operating on military bases in the Hampton Roads area as reported in the technical support document for the maintenance plan and incorporated without change into the emission forecasts for the conformity analysis. The estimates do not vary by year.

Exhibit ES-6: Hampton Roads Military Base Emissions

Year	Regional Emissions *(tons per ozone season weekday)*	
	NOx	**VOC**
2011	0.52	0.26
2018	0.52	0.26

Source: Table 4-7, page 62, in the Technical Support Document for the Maintenance Plan approved effective June 1, 2007 (72 FR 30490)

1. Introduction and Overview

This report presents the transportation conformity analysis for the amended Hampton Roads 2040 Long Range Transportation Plan (LRTP, or "Plan") and the Fiscal Year (FY) 2018-2021 Transportation Improvement Program (TIP, or "Program").

The Hampton Roads Transportation Planning Organization (HRTPO) serves as the designated Metropolitan Planning Organization (MPO) for the Hampton Roads region and, as such, the forum for cooperative transportation decision-making for the area[24].

The HRTPO leads the development of the LRTP and TIP, in consultation and coordination with the Virginia Department of Transportation (VDOT) and other public and private stakeholders as appropriate. Per an interagency agreement developed to meet the requirements of the federal planning rule at 23 CFR 450.314[25], VDOT, working with the MPO and in consultation and coordination with other agencies and public and private stakeholders as appropriate, leads the development of the regional conformity analyses.

The report is organized as follows:

- Chapter 1 (this chapter) provides an overview of applicable federal, state and local regulatory requirements and guidance.
- Chapter 2 provides a detailed review of the modeling methodology and assumptions as applied in the conformity analysis.
- Chapter 3 summarizes the consultation process and results.
- Chapter 4 documents the results of the conformity analysis, supporting a recommendation for a finding of conformity for the LRTP and TIP.

1.1 Clean Air Act Requirements

The Clean Air Act (CAA)[26] was passed in 1963 and most recently amended in 1990. Requirements of the CAA that are relevant to this analysis include national ambient air quality standards (NAAQS) for specific "criteria" pollutants, motor vehicle emission standards, and transportation conformity. The first two requirements are reviewed briefly in this section, including an overview of related trends; requirements for transportation conformity are reviewed in more detail later in this chapter.

Exhibit 1-1 lists the currently applicable NAAQS. Areas not meeting these standards may be designated as nonattainment and made subject to various provisions of the CAA until attainment is achieved. Development of a state implementation plan (SIP) that demonstrates attainment by a required date is one such provision; federal transportation conformity requirements are another. SIPs address not only direct emissions of a pollutant but also its precursors. For example, nitrogen oxides (NO_x) and volatile organic compounds (VOC) are considered the primary precursors to ozone, as emissions of

[24] For more information, see: http://www.hrtpo.org.
[25] Metropolitan Planning Agreement for the Hampton Roads Area, effective July 15, 2009 (updated in 2017).
[26] *Clean Air Act* (and amendments): http://www.epa.gov/air/caa/

these pollutants react in the atmosphere in the presence of sunlight and contribute to the atmospheric formation of ozone.

Exhibit 1-1: National Ambient Air Quality Standards

Pollutant [links to historical tables of NAAQS reviews]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 µg/m³ (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)		primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	12.0 µg/m³	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m³	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m³	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 µg/m³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m3 as a calendar quarter average) also remain in effect.
(2) The level of the annual NO2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.
(4) The previous SO2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2)any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO2 standards or is not meeting the requirements of a SIP call under the previous SO2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Source: US Environmental Protection Agency (https://www.epa.gov/criteria-air-pollutants/naaqs-table, accessed May 1, 2018).

Areas designated nonattainment that subsequently attain or regain attainment may be re-designated to attainment, subject to maintenance requirements[27]. The development and implementation of a "maintenance" plan (as a revision to the SIP) to "*provide for the maintenance of the national primary ambient air quality standard for such air pollutant in the area concerned for at least 10 years after the re-designation*"[28] is one such requirement. A second maintenance plan, or "*an additional revision of the applicable State implementation plan for maintaining the national primary ambient air quality standard for 10 years after the expiration of the 10-year period referred to in subsection (a)*", is another such requirement[29].

Maintenance plans typically include the establishment of motor vehicle emission budgets (MVEBs) for the region, which are limits or caps on total regional emissions from the on-road motor vehicle fleet. Federal and state conformity requirements, including demonstrations of conformity to the SIP and the motor vehicle emission budgets established therein, remain in force until the designated maintenance periods are over.

National Trends

Long-term trends in emissions and ambient concentrations are informative, given the time that has elapsed since the CAA of 1963 was passed and the efforts made since then to reduce emissions through technology and other means. Exhibit 1-2 presents a simplified graphic of NO_x and VOC emission standards implemented since the 1960s for on-road light duty vehicles (cars and light trucks). Emissions standards similarly apply for heavy duty vehicles (trucks and buses). Related fuel quality standards also apply. A complete listing of federal emission standards for on-road vehicles is available online from EPA[30]. The graphic gives a visual sense of how federal emission standards have been made increasingly more stringent over time.

Exhibit 1-3 presents national trends in vehicle-miles-traveled (VMT) and associated emissions of NO_x and VOC from the on-road motor vehicle fleet. In general, despite ongoing and substantial increases in VMT across the nation, total emissions of NO_x and VOC have been reduced substantially over the same time period. The reduction in emissions from motor vehicles is attributable to the introduction of more stringent vehicle and fuel quality standards and the emission controls implemented to meet those standards.

Exhibit 1-4 presents national trends in ambient ozone levels. The general trend is downward, that is, towards improved air quality with lower concentrations of ozone, which is attributable to the emission reductions across all sectors including transportation. Exhibit 1-5 presents recent trends in ambient ozone levels for southeast states including Virginia.

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[27] CAA, Title I, Part D, Section 175A - *Maintenance Plans* https://www.gpo.gov/fdsys/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap85-subchapI-partD-subpart1-sec7505a.htm

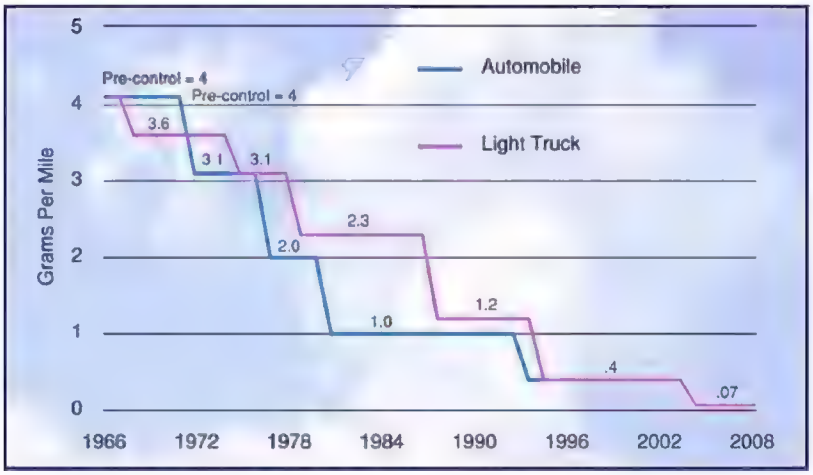
[28] *Ibid*, subsection (a).

[29] *Ibid*, subsection (b).

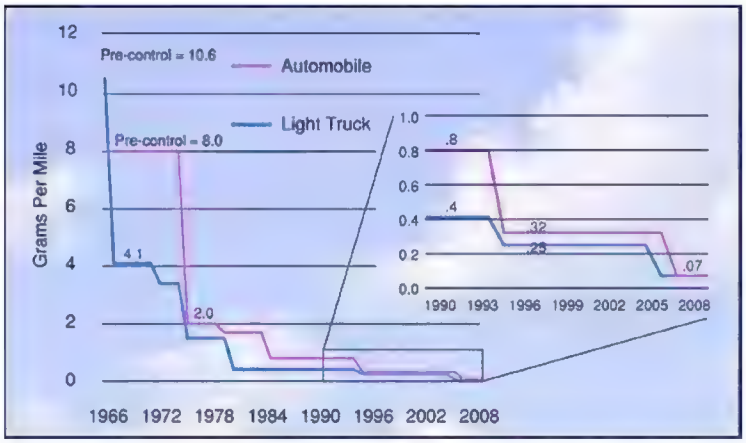
[30] US EPA website "*Emission Standards Reference Guide for On-road and Nonroad Vehicles and Engines*": http://www.epa.gov/otaq/standards/allstandards.htm

Exhibit 1-2: Federal Emission Standards for Light Duty Vehicles and Trucks

(a) NO_x

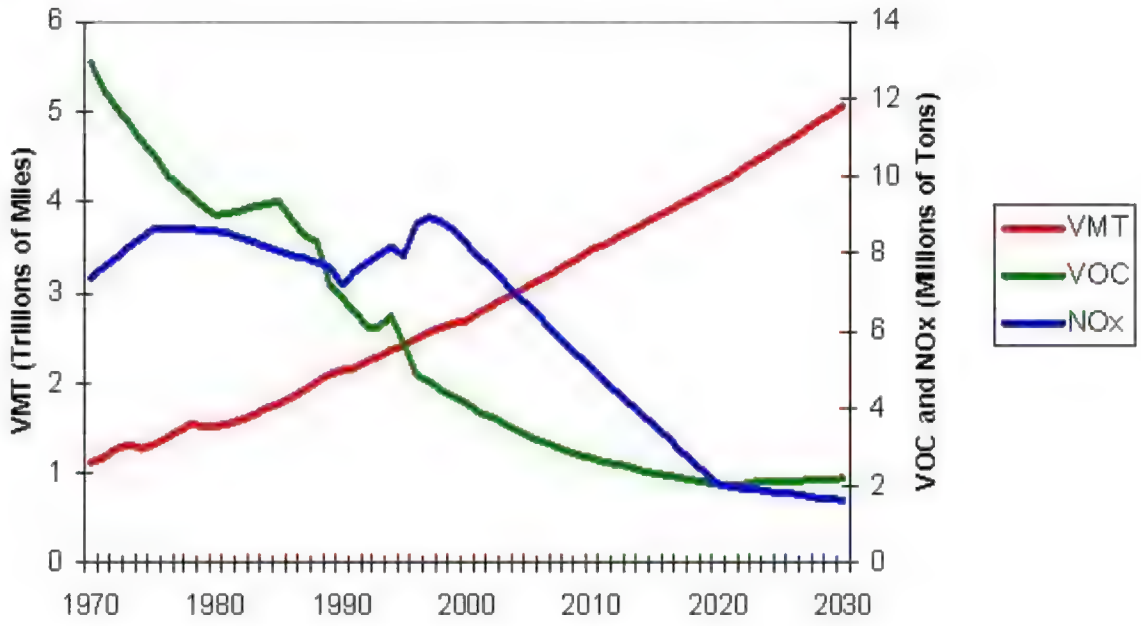


(b) VOC



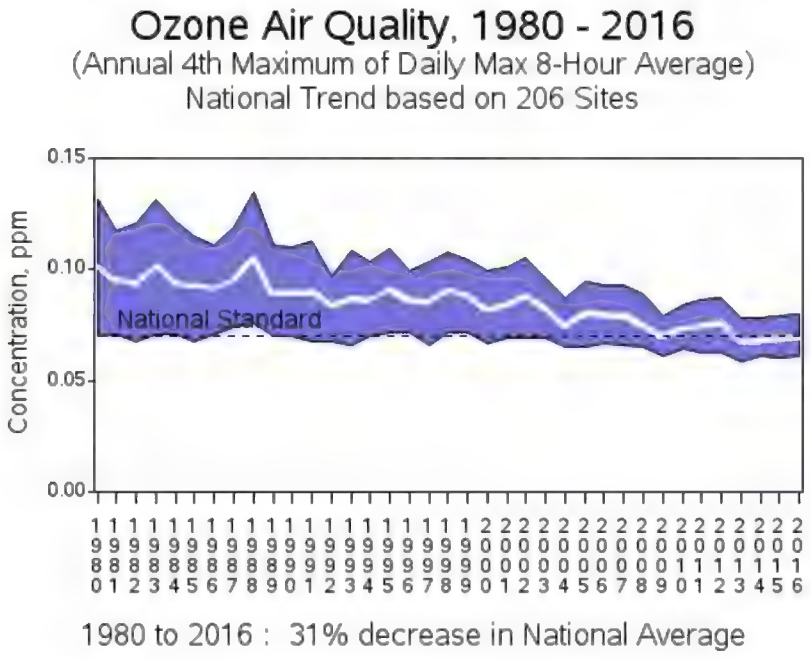
Source: FHWA website entitled "Federal Emissions Standards", accessed March 2010: http://www.fhwa.dot.gov/environment/aqfactbk/page14.htm

Exhibit 1-3: National Trends in Vehicle Miles Traveled (VMT) and Associated Emissions of Ozone Precursors



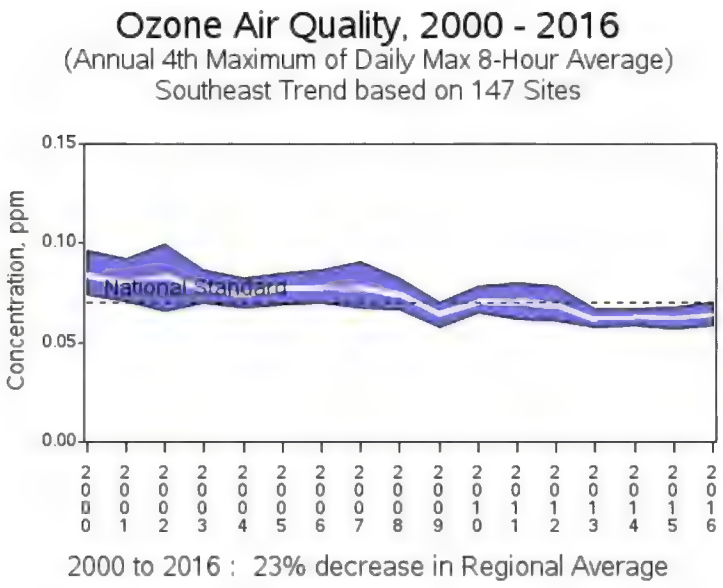
Source: Chart entitled "Vehicle Miles Traveled (VMT) vs. Vehicle Emissions", dated July 30, 2002, on FHWA website (accessed March 2010): http://www.fhwa.dot.gov/environment/vmtems.htm

Exhibit 1-4: National Trends in Ambient Ozone Levels



Source: US EPA website, accessed May 21, 2018.
See: https://www.epa.gov/air-trends/ozone-trends

Exhibit 1-5: Recent Trends in Ozone Levels for Hampton Roads


Ozone Air Quality, 2000 - 2016
(Annual 4th Maximum of Daily Max 8-Hour Average)
Southeast Trend based on 147 Sites
Concentration, ppm
0.15
0.10
0.05
0.00
National Standard
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
2000 to 2016 : 23% decrease in Regional Average

Source: US EPA website, accessed May 21, 2018.
See: https://www.epa.gov/air-trends/ozone-trends

1.2 Air Quality Planning Status for Hampton Roads

The Hampton Roads area is currently in attainment for all of the NAAQS. However, as a result of a recent court ruling and notwithstanding the previous revocation of the 1997 ozone NAAQS for which the region was in maintenance[31], conformity requirements have been reinstated nation-wide for that NAAQS. Motor vehicle emission budgets for the region are specified in the maintenance plan that was approved by EPA before the 1997 ozone NAAQS was revoked.

Chronology of Air Quality Designations for Hampton Roads

On November 6, 1991, the Hampton Roads, Virginia region was classified by EPA as a marginal ozone non-attainment area for the one-hour ozone standard (56 FR 56694). The designated non-attainment area included the Counties of James City and York as well as the Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg.

On March 12, 1997, EPA approved a re-designation of the Hampton Roads one-hour

[31] On February 16, 2018, a DC Circuit Court of Appeals decision (No. 15-1115, South Coast Air Quality Management District, Petitioner v. Environmental Protection Agency, et al., Respondents) addressed the 2015 revocation by EPA of the 1997 ozone NAAQS and reinstated associated conformity requirements across the nation. EPA has since submitted a petition for rehearing, to which the court has not responded as of the time of preparation of this analysis. Unless and until there are further court decisions changing federal conformity requirements associated with the previously revoked 1997 ozone NAAQS, this analysis is proceeding assuming that they along with associated state conformity requirements are again in effect. See: https://www.cadc.uscourts.gov/internet/opinions.nsf/217B6778AE3EC89C8525823600532AE0/$file/15-1115-1718293.pdf

ozone non-attainment area to attainment in a direct final rule effective April 28, 1997[32]. At the same time, EPA approved the associated maintenance plan revision to the SIP. The re-designation was based upon three years of quality-assured ambient air quality monitoring data for the area that demonstrated that the one-hour ozone NAAQS had been attained.

On July 18, 1997, EPA promulgated a revised (eight-hour) ozone NAAQS of 0.08 parts per million (ppm), with designations of areas across the nation as attainment or nonattainment for the new standard to follow[33]. Implementation of the new ("1997") eight-hour ozone standard was however delayed by litigation.

On April 30, 2004, EPA, in a final rule effective June 15, 2004, re-classified the Hampton Roads area to be in marginal non-attainment for the 1997 eight-hour ozone standard based on a review of local ambient air quality monitoring data for 2001 through 2003[34]. The area so designated included the area previously designated as non-attainment for the one-hour standard plus the Counties of Gloucester and Isle of Wight.

In September 2006, in response to the re-classification to nonattainment for the 1997 eight-hour ozone standard, VDEQ submitted to EPA a request[35] for re-designation to attainment along with a proposed maintenance plan[36] and base year inventory. Ambient air quality monitoring data for 2003 through 2005 showing attainment of the standard were presented with the re-designation request. The proposed maintenance plan included new motor vehicle emission budgets to be applied in future regional conformity analyses. As stated in the introduction of the re-designation request:

> "*Based on an analysis of air quality monitoring data, source emission reduction information, and the existing federal and state regulatory programs, the Commonwealth of Virginia has determined that the Hampton Roads 8-hour ozone nonattainment area qualifies for re-designation to attainment. The maintenance plan, which includes a mobile source budget, has also been developed in order for the acceptable ozone level to continue.*"

Exhibit 1-6, taken from the maintenance plan, shows the maintenance area for the 1997 eight-hour ozone standard.

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[32] US EPA, 62 FR 11337, 40 CFR Parts 52 and 81 [VA068-5018a, VA066-5018a; FRL-5688-8], Approval and Promulgation of Air Quality Implementation Plans; Designation of Areas for Air Quality Planning Purposes; Virginia; Re-designation to Attainment of the Hampton Roads Ozone Nonattainment Area, Approval of the Maintenance Plan and Mobile Emissions Budget, Direct Final Rule effective April 28, 1997.

[33] US EPA, 62 FR 38855, *National Ambient Air Quality Standards for Ozone; Final Rule*, July 18, 1997, Final Rule effective September 16, 1997.

[34] US EPA, 69 FR 23858, 40 CFR Part 81 [OAR-2003-0083; FRL-7651-8] RIN 2060-, Air Quality Designations and Classifications for the 8-Hour Ozone National Ambient Air Quality Standards; Early Action Compact Areas With Deferred Effective Dates, Final Rule, April 30, 2004. See: http://edocket.access.gpo.gov/2017/04-9152.htm.

[35] Virginia DEQ, Request for Re-designation to Attainment for the Hampton Roads Nonattainment Area Consisting of the Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg, and the Counties of Gloucester, Isle of Wight, James City, and York. Final, October 2006.

[36] Virginia DEQ, "Maintenance Plan for The Hampton Roads Nonattainment Area Consisting of the Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Suffolk, Virginia Beach, and Williamsburg and the Counties of James City, York, Gloucester, and Isle of Wight. Final, October 2006.

On April 13, 2007, considering the VDEQ request and ambient air quality monitoring data showing attainment of the standard as well as other criteria for re-designation per the requirements of the CAA, EPA issued a proposed rule to re-designate the Hampton Roads area to attainment for the 1997 eight-hour ozone standard and approve the associated maintenance plan and base year inventory[37].

Exhibit 1-6: Hampton Roads Maintenance Area for the 1997 Eight-Hour Ozone Standard

Source: Virginia DEQ, "Maintenance Plan for The Hampton Roads Nonattainment Area Consisting of the Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Suffolk, Virginia Beach, and Williamsburg and the Counties of James City, York, Gloucester, and Isle of Wight. Final", October 2006.

On June 1, 2007, EPA approved the request for re-designation of the Hampton Roads area to attainment for the 1997 eight-hour ozone standard[38]. EPA also approved the associated maintenance plan for the 1997 eight-hour ozone standard (superseding the maintenance plan for the one-hour standard), the associated motor vehicle emission budgets and 2002 base year inventory.

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[37] US EPA, 72 FR 18602, 40 CFR Parts 52 and 81 [EPA-R03-OAR-2006-0919; FRL-8298-2], Approval and Promulgation of Air Quality Implementation Plans: Virginia; Re-designation of the Hampton Roads 8-Hour Ozone Nonattainment Area to Attainment and Approval of the Associated Maintenance Plan and 2002 Base-Year Inventory, Proposed Rule, Friday, April 13, 2007. See: http://edocket.access.gpo.gov/2017/E7-7017.htm.

[38] US EPA, 72 FR 30490, 40 CFR Parts 52 and 81 [EPA-R03-OAR-2006-0919; FRL-8320-9], Approval and Promulgation of Air Quality Implementation Plans; Virginia; Re-designation of the Hampton Roads 8-Hour Ozone Nonattainment Area to Attainment and Approval of the Area's Maintenance Plan and 2002 Base-Year Inventory, Final Rule, Friday, June 1, 2007 (effective the same day). See http://edocket.access.gpo.gov/2017/E7-10581.htm.

Exhibit 1-7 presents the motor vehicle emission budgets as excerpted from the final rule. Note, while the table lists units of tons per day (TPD), the methodology presented in the Technical Support Document (TSD) for the maintenance plan indicates the "day" selected represents an average ozone season weekday.

For reference, Exhibit 1-8 presents the estimated emissions as reported in the TSD for on-road motor vehicles operating on military bases in the Hampton Roads area. These emissions are included with the motor vehicle emission budget established for the region.

Exhibit 1-7: Motor Vehicle Emissions Budgets for Hampton Roads

ADEQUATE AND APPROVED MOTOR VEHICLE EMISSIONS BUDGETS (MVEBS) IN TONS PER DAY (TPD)		
Budget year	NO_x	VOC
2011	50.387	37.846
2018	31.890	27.574

Source: Excerpted from 72 FR 30490, effective June 1, 2007.

Exhibit 1-8: Hampton Roads Military Base Emissions

Year	Regional Emissions *(tons per ozone season weekday)*	
	NOx	VOC
2011	0.52	0.26
2018	0.52	0.26

Source: Table 4-7, page 62, in the TSD for the maintenance plan approved effective June 1, 2007 (72 FR 30490)

A legal review was undertaken in this same time period of certain aspects of the implementation rule[39] for the ozone standard. The result of the review was to confirm the status of that rule as well as the relative applicability of motor vehicle emission budgets associated with the one- and eight-hour standards.

In brief, the April 2007 proposed re-designation by EPA included a discussion of a December 22, 2006 DC Circuit Court of Appeals decision[40] regarding the Implementation

[39] US EPA, 69 FR 23951, 40 CFR Parts 50, 51 and 81 [OAR 2003-0079, FRL-7651-7] RIN 2060-AJ99, *Final Rule To Implement the 8-Hour Ozone National Ambient Air Quality Standard--Phase 1*, Final Rule, April 30, 2004, effective June 15, 2004. See http://edocket.access.gpo.gov/2017/04-9153.htm.

[40] United States Court of Appeals for the District of Columbia Circuit, No. 04-1200, South Coast Air Quality Management District, Petitioner v. Environmental Protection Agency, Respondent, National Environmental Development Association's Clean Air Regulatory Project, et al., Intervenors, Consolidated with No. 04-1201, et al., On Petitions for Review of a Final Rule of the Environmental Protection Agency, Argued October 12, 2006, Decided December 22, 2006. See:

Rule. Previously, on March 22, 2007, EPA had petitioned for a panel rehearing of that decision, and others had petitioned as well.

On June 8, 2007, the DC Circuit Court of Appeals issued a decision in which it denied the petitions[41]. However, it granted the joint request of EPA and other petitioners and clarified the December 22, 2006 ruling regarding both the (limited) scope of the vacatur of the 2004 Final Rule[42] as well as the relative applicability of motor vehicle emission budget for conformity determinations[43], such that budgets established for the eight-hour standard effectively supersede those previously set for the one-hour standard.

With the clarifications provided by the Court, the budgets for the 1997 eight-hour ozone standard as presented in the maintenance plan for Hampton Roads (and excerpted in the Exhibit above) superseded, effective June 1, 2007, the budgets previously established for the region for the one-hour ozone standard.

On March 6, 2015, EPA published a final rule in the Federal Register on the "Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements", for which the summary stated in part that: "*Other issues also addressed in this final rule are the revocation of the 1997 ozone NAAQS and anti-backsliding requirements that apply when the 1997 ozone NAAQS are revoked.*" The revocation (effective April 6, 2015) effectively eliminated conformity requirements associated with the 1997 ozone NAAQS for many areas across the nation, including the Hampton Roads region.

On February 16, 2018, however, a court decision regarding the 2015 revocation by EPA of the 1997 ozone NAAQS effectively reinstated conformity requirements for that NAAQS across the nation[44]. On April 23, 2018, FHWA issued "*Interim Guidance on Conformity Requirements for the 1997 Ozone NAAQS*" that stated in part (on page 1) the following:

"*The U.S. Court of Appeals for the D.C. Circuit recently issued a decision in*

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http://pacer.cadc.uscourts.gov/docs/common/opinions/200612/04-1200a.pdf

[41] United States Court of Appeals for the District of Columbia Circuit, No. 04-1200, South Coast Air Quality Management District, Petitioner v. Environmental Protection Agency, Respondent, National Environmental Development Association's Clean Air Regulatory Project, et al., Intervenors, Consolidated with No. 04-1201, et al., filed June 8, 2007. See: http://pacer.cadc.uscourts.gov/docs/common/opinions/200706/04-1200b.pdf

[42] Ibid, Section III, paragraph 2, pp.7-8. Regarding vacatur of the 2004 Final Rule, the June 2007 ruling stated: "We also grant their request that the 2004 Rule be vacated only to the extent that the court has sustained challenges to it. …EPA is urged to act promptly in promulgating a revised rule that effectuates the statutory mandate by implementing the eight-hour standard…"

[43] Ibid, Section III, paragraph 1, page 7. Regarding conformity, the June 2007 ruling stated: "We grant the joint request by EPA and the Environmental Petitioners to make explicit that the court's reference to conformity determinations speaks only to the use of one-hour motor vehicle emissions budgets as part of eight-hour conformity determinations until eight-hour motor vehicle emissions budgets are available."

[44] On February 16, 2018, a DC Circuit Court of Appeals decision (No. 15-1115, South Coast Air Quality Management District, Petitioner v. Environmental Protection Agency, et al., Respondents) addressed the 2015 revocation by EPA of the 1997 ozone NAAQS and reinstated associated conformity requirements. EPA has since submitted a petition for rehearing, to which the court has not responded as of the time of preparation of this analysis. Unless and until there are further court decisions changing federal conformity requirements associated with the previously revoked 1997 ozone NAAQS, this analysis is proceeding assuming they are in effect. See: https://www.cadc.uscourts.gov/internet/opinions.nsf/217B6778AE3EC89C8525823600532AE0/$file/15-1115-1718293.pdf

> *South Coast Air Quality Management District v. EPA, No. 15-1115, which struck down portions of the 2008 Ozone NAAQS SIP Requirements Rule concerning the ozone National Ambient Air Quality Standards (NAAQS). These portions of the 2008 Ozone NAAQS SIP Requirements Rule addressed implementation requirements for the 2008 ozone NAAQS as well as the anti-backsliding requirements associated with the revocation of the 1997 ozone NAAQS. The impact of the decision addresses two groups of ozone areas described in the decision:*
>
> > *Areas that were maintenance areas for the 1997 ozone NAAQS at the time of revocation and are designated as attainment for the 2008 Ozone NAAQS. These areas have not been required to make transportation conformity determinations for any ozone NAAQS since the 1997 ozone NAAQS were revoked in April 2015 by EPA's Rule…"*

On page 2 of the FHWA Interim Guidance:

- "*New Metropolitan Long Range Plan and Transportation Improvement Programs (TIP), updates and amendments that include the addition of a project that is not exempt from transportation conformity may not proceed until transportation conformity with the 1997 ozone NAAQS is determined. Exempt projects are listed in 40 CFR 93.126 and 93.127. Administrative modifications to Metropolitan Plans and TIPs may proceed because, by definition in 23 CFR 450.104, those actions do not require a conformity determination…*"

As the Hampton Roads area is one of the many areas across the nation that were in maintenance for the 1997 ozone NAAQS at the time of its revocation and are in attainment of the subsequent 2008 ozone NAAQS, it is subject to the court ruling. Transportation plans and programs therefore must again meet conformity requirements for the 1997 ozone NAAQS.

1.3 Transportation Conformity Requirements

This conformity analysis was conducted in compliance with the federal transportation conformity rule (40 CFR Parts 51 and 93)[45] and the corresponding state transportation conformity regulation (9 VAC 5-151)[46]. Background on these requirements is provided below.

Federal, state and local requirements addressing transportation conformity generally apply for air quality nonattainment and maintenance areas. Conformity requirements originate from Section 176(c) of the Clean Air Act (CAA)[47] as amended, which requires that federal agencies and MPOs not approve any transportation project, program, or plan that does not conform with the approved State Implementation Plan (SIP) for air quality.

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[45] Federal Transportation Conformity Regulations (EPA Website): https://www.epa.gov/state-and-local-transportation

[46] Virginia Regulation for Transportation Conformity (9 VAC5-151): https://law.lis.virginia.gov/admincode/title9/agency5/chapter151/

[47] *Clean Air Act* (and amendments): http://www.epa.gov/air/caa/

Section 176(c)(1) of the CAA provides a definition for conformity, stating:

> *"… Conformity to an implementation plan means—*
>
> *"(A) conformity to an [air quality] implementation plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and*
>
> *(B) that such activities will not— (i) cause or contribute to any new violation of any standard in any area; (ii) increase the frequency or severity of any existing violation of any standard in any area; or (iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area. …"*

Further, Section 176(c)(4)(B) of the CAA adds a requirement for regulatory action in the form of criteria and procedures for conformity to be promulgated by EPA in concurrence with the US DOT:

> *176(c)(4)(B) Transportation plans, programs, and projects.— The Administrator, with the concurrence of the Secretary of Transportation, shall promulgate, and periodically update, criteria and procedures for demonstrating and assuring conformity in the case of transportation plans, programs, and projects.*

Federal Conformity Regulation

On November 24, 1993, in keeping with CAA requirements, EPA promulgated a rule (40 CFR Part 51, Subpart T) establishing "*criteria and procedures for determining conformity to state and federal implementation plans of transportation plans, programs, and projects funded or approved under Title 23 U.S.C. or the Federal Transit Act*." The final rule for transportation conformity became effective on December 27, 1993.

EPA and the U.S. DOT have subsequently finalized a number of amendments to the federal conformity rule, e.g., following the passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) which was signed into law on August 10, 2005. Several sections of the amended rule have also been modified and/or remanded due to court rulings. The most current compilation is that produced by EPA in March 2010[48]. Although EPA has proposed amendments since then, they have not to date issued a final rule and the amendments as proposed would not affect this analysis[49].

In brief, the federal transportation conformity rule was written to meet CAA requirements and ensure conformity to SIPs for the purposes of: (1) eliminating or reducing the number and severity of violations of national ambient air quality standards (NAAQS), and (2) attaining these standards. It also is intended to ensure that neither a transportation system as a whole nor an individual project will cause or contribute to new air quality violations or will increase the frequency or severity of existing violations.

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[48] US EPA, Transportation Conformity Regulations as of April 2012, EPA-420-B-12-013, April 2012. See: https://www.epa.gov/state-and-local-transportation/current-law-regulations-and-guidance-state-and-local-transportation.

[49] See http://www.epa.gov/otaq/stateresources/transconf/conf-regs.htm

Under the federal conformity rule, MPOs, state departments of transportation and the FHWA along with the FTA are responsible for conformity determinations for: (1) LRTPs, (2) TIPs, (3) transportation projects that receive federal funding or require FHWA or FTA approval, and (4) regionally significant non-federal projects, if these actions occur in areas that have been designated by EPA as nonattainment or maintenance areas for any of the criteria pollutants.

State Conformity Regulation

The federal conformity rule at 40 CFR Part 51 effectively requires certain conformity requirements, primarily addressing consultation, be enacted in state regulation. Accordingly, the VDEQ in 1997 developed the Virginia *Regulation for Transportation Conformity* and have updated it on occasion since then. The current version is specified in the Virginia Administrative Code (VAC) at 9 VAC 5-151. The Virginia regulation closely reflects the requirements of the federal rule for inter-agency and public consultation, and was assumed in effect for this analysis[50]. More detail on the requirements of the state regulation for consultation is presented in Chapter 3.

Federal Criteria

Section 93.109[51] of the federal transportation conformity rule identifies specific criteria that are required to be satisfied in conformity demonstrations for transportation plans, programs and projects.

Exhibit 1-9 presents an excerpt from the federal rule showing the criteria specific to just plans and programs. Each of these listed criteria is reviewed briefly below, with more detail provided in Chapter 4 with the results of the conformity analysis.

- §93.110[52] requires that conformity determinations be based upon the latest planning assumptions in force at the time of the determination.
- §93.111[53] requires that the latest emissions model be applied.
- §93.112[54] requires that consultation be conducted following specified procedures. More detail on the requirements is presented in Chapter 3[55,56].

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[50] On February 22, 2018, shortly after the previously referenced February 16, 2018 court decision was issued, an EPA final rule was published in the federal register that stated in part that "EPA is approving … revisions updating the Virginia SIP to reflect the revocation of the 1997 ozone NAAQS in accordance with the requirements of the Clean Air Act (CAA)". Given the court decision, this conformity analysis is proceeding as if the Virginia conformity SIP requirements apply for the 1997 ozone NAAQS. See: https://www.gpo.gov/fdsys/pkg/FR-2018-02-22/pdf/2018-03524.pdf

[51] Federal Conformity Rule, 40 CFR 93.109 Criteria and Procedures for Determining Conformity of Transportation Plans, Programs, and Projects: General. http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.109.htm

[52] Federal Conformity Rule, 40 CFR 93.110 Criteria and Procedures: Latest Planning Assumptions http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.110.htm

[53] Federal Conformity Rule, 40 CFR 93.111 *Criteria and Procedures: Latest Emissions Model* http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.111.htm

[54] Federal Conformity Rule, 40 CFR 93.112 *Criteria and Procedures: Consultation* http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.112.htm

[55] Section 93.112 states in part: "Until the implementation plan revision required by Sec. 51.390 of this chapter is fully approved by EPA, the conformity determination must be made according to Sec. 93.105 (a)(2) and (e) and the requirements of 23 CFR part 450."

[56] Federal Conformity Rule, 40 CFR 93.105 *Consultation*

Exhibit 1-9: Excerpt from 40 CFR 93.109 ("Table 1--Conformity Criteria") of the Federal Transportation Conformity Rule

All Actions at all times:	
§93.110	Latest planning assumptions
§93.111	Latest emissions model
§93.112	Consultation
Transportation Plan:	
§93.113(b)	TCMs
§93.118 and/or §93.119	Emissions budget and/or Interim emissions
TIP:	
§93.113(c)	TCMs
§93.118 and/or §93.119	Emissions budget and/or Interim emissions

- §93.113[57] details the steps necessary to demonstrate that the Plan and Program provide for the timely implementation of transportation control measures (TCMs) and do not interfere with their implementation.
- §93.118[58] requires that the Plan and Program be consistent with the motor vehicle emission budgets specified in the applicable SIP. Since emission budgets have been established for the Hampton Roads area, as reviewed later in this chapter, emission budget tests as required in the federal rule are applicable for this region.[59]

  Budgets apply not only for the year for which they are established but also for subsequent years. Section 93.118(b)(1)(ii) specifically requires that "*Emissions in years for which no motor vehicle emission budget(s) are specifically established must be less than or equal to the motor vehicle emissions budget(s) established for the most recent prior year. …*"

Additional detailed requirements for modeling are provided in §93.122[60], which addresses "*procedures for determining regional transportation-related emissions*". This section requires that all regionally significant projects included in the Plan and Program be included in the regional emissions analysis. This section also specifies requirements for both transportation and emission modeling. The applicable modeling requirements for this analysis are summarized with the conformity demonstration in Chapter 4.

For reference, the federal rule also specifies related requirements apply for project-level

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http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.105.htm

[57] Federal Conformity Rule, 40 CFR 93.113 Criteria and Procedures: Timely Implementation of TCMs http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.113.htm

[58] Federal Conformity Rule, 40 CFR 93.118 Criteria and Procedures: Motor Vehicle Emissions Budget http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.118.htm

[59] Since budget tests are applicable for this region, the interim tests provided in Section 93.119 are not required and are not reviewed here.

[60] Federal Conformity Rule, 40 CFR 93.122 *Procedures for Determining Regional Transportation-Related Emissions*. http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.122.htm

determinations:

- §93.114[61] requires that a currently conforming plan and TIP at the time of project approval.
- §93.115[62] requires that projects be from a conforming transportation plan and program.
- §93.126[63] provides for exemptions for projects in certain categories from the requirement to determine conformity. It states in part that: "*Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in table 2 of this section are exempt from the requirement to determine conformity. Such projects may proceed toward implementation even in the absence of a conforming transportation plan and TIP.*" The categories listed in Table 2 are grouped as safety, mass transit, air quality, and other projects.
- §93.127[64] provides for the exemption of certain project categories from the requirement to conduct regional emission analyses in support of conformity determinations. It states in part that: *"Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in Table 3 of this section are exempt from regional emissions analysis requirements.*" Projects listed in Table 3 include: intersection channelization projects, intersection signalization projects at individual intersections, interchange reconfiguration projects, changes in vertical and horizontal alignment, truck size and weight inspection stations, and bus terminals and transfer points. If the project is not otherwise exempt, requirements for project-level conformity determinations may still apply for these projects.

1.4 Chronology of Conformity Determinations for Hampton Roads

Exhibit 1-10 presents the chronology of conformity determinations for plans and programs for Hampton Roads from 2001 to the present. The Exhibit also lists expiry dates for the current plan and TIP, i.e., the ones approved prior to this conformity analysis. Expiry dates apply as, pursuant to federal regulations, transportation plans and TIPs must be updated (and conformity re-determined) at least every four years. An additional limitation applies for TIPs, such that they also expire when FHWA/FTA approval of the state transportation improvement program (STIP) expires[65].

The update cycle requirements for plans and TIPs differ from those for conformity determinations. Plan and TIP cycles restart with updates only, and not amendments, to the Plan and/or TIP respectively. In contrast, conformity cycles for Plans and/or TIPs

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[61] Federal Conformity Rule, 40 CFR 93.114 *Criteria and procedures: Currently Conforming Transportation Plan and TIP.* http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.114.htm

[62] Federal Conformity Rule, 40 CFR 93.115 *Criteria and procedures: Projects from a Transportation Plan and TIP.* http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.115.htm

[63] Federal Conformity Rule, 40 CFR 93.126 *Exempt Projects.* http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.126.htm

[64] Federal Conformity Rule, 40 CFR 93.127, Projects Exempt from Regional Emissions Analyses. http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.127.htm

[65] See 23 CFR 450.322 & 450.324, and 40 CFR 93.104 respectively:

- Federal Planning Rule, 23 CFR 450.324 *Development and Content of the Metropolitan Transportation Plan*: http://edocket.access.gpo.gov/cfr_2017/aprqtr/23cfr450.324.htm
- Federal Planning Rule, 23 CFR 450.326, Development and Content of the Transportation Improvement Program (TIP): http://edocket.access.gpo.gov/cfr_2017/aprqtr/23cfr450.326.htm
- Federal Conformity Rule, 40 CFR 93.104, *Frequency of Conformity Determinations*: http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.104.htm

restart with either updates or amendments to the Plan and/or TIP respectively. Plan and TIP cycles therefore tend to be the limiting factor for new conformity determinations.

Exhibit 1-10: Chronology of Conformity Determinations for Hampton Roads*

Date	Plan	TIP	Cycle Length** (Years)
US DOT Conformity Finding (Approval Dates)			
December 12, 2011	2034 LRTP	FY 2012-2015 TIP (Amended)	*4*
September 29, 2011	*[2030 LRTP unchanged]*	FY 2012-2015 TIP	*4*
June 20, 2011	2030 LRTP	FY 2009-2012 TIP	4
August 30, 2010	2030 LRTP	FY 2009-2012 TIP	4
July 30, 2008	*[2030 CLRP unchanged]*	FY 2009-2012 TIP	4
January 22, 2008	2030 CLRP	FY 2006-2009 TIP (Amended)	4
August 22, 2006	2026 CLRP (Amended)	FY 2006-2009 TIP	4
October 21, 2005	2026 CLRP (Amended)	FY 2005-2008 TIP (Amended)	4
August 10, 2005 - SAFETEA-LU signed, adding a year to planning & conformity cycles.			
December 10, 2004	2026 CLRP (Amended)	FY 2005-2008 TIP	3
August 27, 2004	*[2026 CLRP unchanged]*	FY 2005-2007 TIP	3
June 21, 2004	*[2026 CLRP unchanged]*	FY 2003-2005 TIP	3
February 3, 2004	2026 CLRP	*[FY 2003-2006 TIP unchanged]*	3

* Conformity requirements were eliminated with the revocation by EPA of the 1997 ozone NAAQS for which the region was in maintenance. A February 2018 court decision reinstated conformity requirements associated with that NAAQS nation-wide. See: https://www.cadc.uscourts.gov/internet/opinions.nsf/217B6778AE3EC89C8525823600532AE0/$file/15-1115-1718293.pdf

** Four years update cycles apply for transportation plans and TIPs and their respective conformity determinations. See 23 CFR 450.322 & 450.324, and 40 CFR 93.104. Note planning & TIP cycles restart with updates only, and not with amendments. In contrast, conformity cycles restart with both updates and amendments to the Plan and/or TIP respectively. Planning & TIP cycles therefore tend to be more limiting, as they are not restarted with amendments.

2. Modeling

A review of the modeling methodology and assumptions applied in the conformity analysis is presented in this chapter, beginning with an overview of the general approach and the determination of the analysis years and motor vehicle emission budgets applicable for Hampton Roads. Then, in turn, reviews of the key input data and specific assumptions applied in each step of the modeling process (transportation modeling, emission factor modeling, and emission modeling) are presented.

2.1 General Approach

Emissions are generally calculated as the product of vehicle activity and an emission factor corresponding to that vehicle class and activity, with the latter typically expressed in units of grams per mile (effectively, grams of pollutant emitted per vehicle-mile-traveled) consistent with federal new vehicle exhaust emission standards that are expressed on that basis. Estimates for regional total emissions, therefore, generally are generated as the product of VMT (by speed, roadway class, vehicle class etc.) and corresponding emission factors.

Three separate models are typically applied in the development of the regional emission forecasts for conformity analyses:

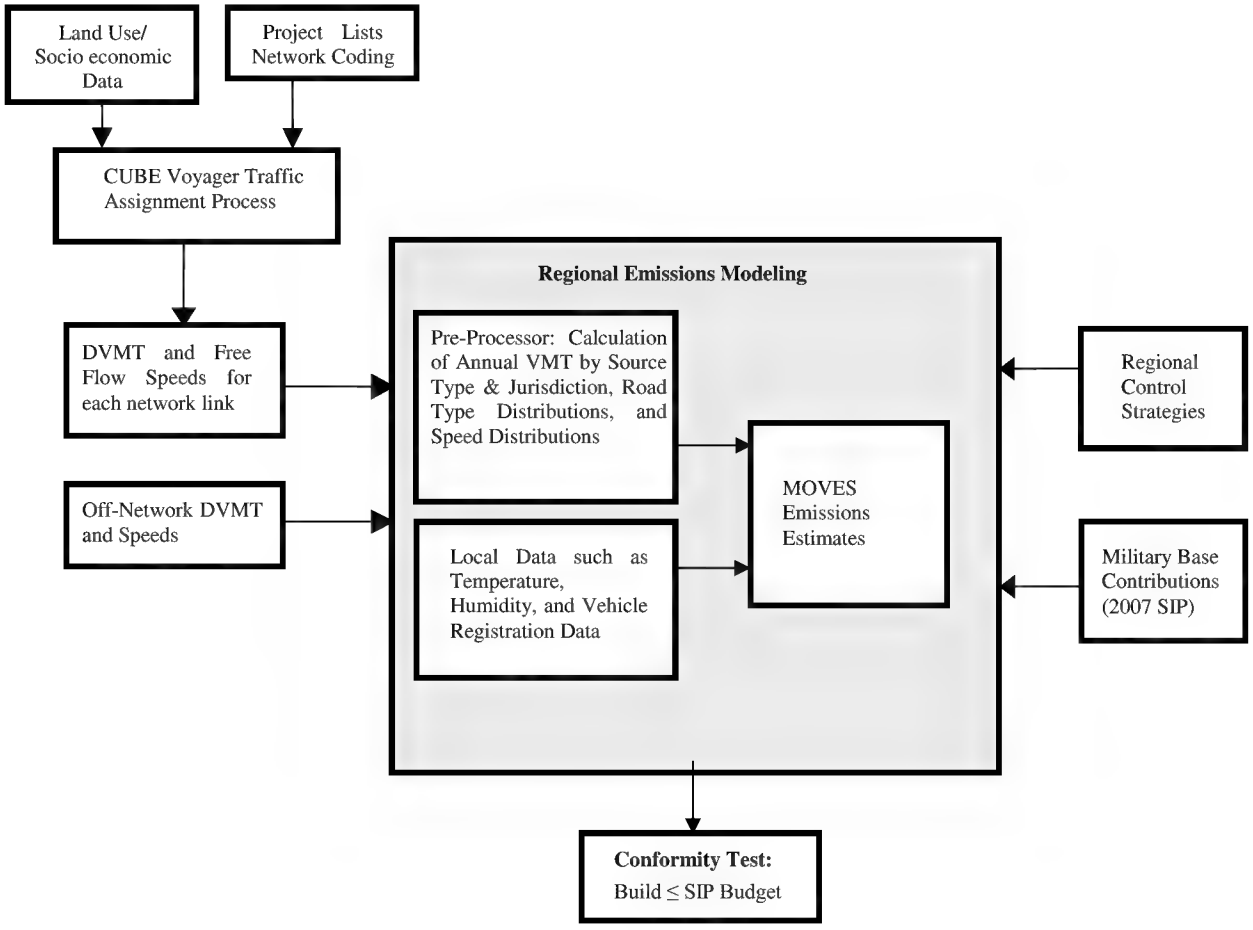
1) the HRTPO regional travel demand forecasting model,
2) the latest EPA-approved model (MOVES) to generate emission forecasts, and
3) the Department database model (a pre-processor) to prepare inputs to the EPA MOVES model for estimating emissions for both the regional network as well as off-network facilities (i.e., local roads).

Exhibit 2-1 below presents the overall process. First, forecasts for travel demand for each year being modeled in the conformity analysis are developed. For the regional network, key inputs include the latest available socioeconomic forecasts and project lists. The latter are applied to update the regional transportation networks as appropriate for changes to the Plan and Program. The resulting regional transportation networks include all interstates, freeways, expressways, principal arterials, and minor arterials that are or will be open to traffic by the forecast year to be modeled for the conformity analysis. Separate networks are developed for each forecast year to be modeled for the conformity analysis. The Department database model or pre-processor is then applied to generate input data as needed for the next step in the modeling process, namely emission modeling, for both the regional network as well as off-network facilities. The Department database model is based upon transportation engineering methods presented in the 2000 Highway Capacity Manual (HCM) and National Cooperative Highway Research Program (NCHRP) Report 387.

Emission estimates are generated using the current version of the EPA emission model, which at the time of this analysis is MOVES2014a. Key region-specific inputs include the travel-related data generated in the first step, as well as vehicle age distributions, fuel quality data and meteorological data. Emissions for mobile sources operating on military

facilities are added as specified in the applicable SIP revision (2007 maintenance plan)[66].

Exhibit 2-1: Conformity Analysis Process


Land Use/ Socio economic Data
Project Lists Network Coding
CUBE Voyager Traffic Assignment Process
DVMT and Free Flow Speeds for each network link
Off-Network DVMT and Speeds
Regional Emissions Modeling
Pre-Processor: Calculation of Annual VMT by Source Type & Jurisdiction, Road Type Distributions, and Speed Distributions
Local Data such as Temperature, Humidity, and Vehicle Registration Data
MOVES Emissions Estimates
Regional Control Strategies
Military Base Contributions (2007 SIP)
Conformity Test:
Build ≤ SIP Budget

The calculations are repeated for each analysis year as needed. Emission budget tests are then applied for each analysis year to demonstrate conformity. Additional detail for each of the modeling steps is provided below.

2.2 Analysis Years and Budgets

Exhibit 2-2 presents the years selected for modeling for this conformity analysis and the associated motor vehicle emission budgets as specified in the 2007 maintenance plan. The budgets listed in the table were originally generated by VDEQ for the maintenance plan using the EPA MOBILE6.2 model, which has been superseded with the issuance by EPA of the MOVES model in 2010; the budgets have not been updated using the current MOVES model.

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[66] Hampton Roads Maintenance Plan for the 1997 Eight-Hour Ozone Standard, as previous referenced. See US EPA, 72 FR 30490, 40 CFR Parts 52 and 81 [EPA–R03–OAR–2006–0919; FRL–8320–9], *Approval and Promulgation of Air Quality Implementation Plans; Virginia; Re-designation of the Hampton Roads 8-Hour Ozone Nonattainment Area to Attainment and Approval of the Area's Maintenance Plan and 2002 Base-Year Inventory*, Final Rule, effective June 1, 2007.
See: http://edocket.access.gpo.gov/2007/E7-10581.htm.

The years selected for analysis are consistent with the requirements of Section 93.118 of the conformity rule, which requires that years selected for the regional conformity analysis include the years for which budgets are established, the horizon year of the transportation plan, and interim year(s) such that analysis years are no more than ten years apart.

Exhibit 2-2: Analysis Years and Budgets[67]

Year	Regional Emission Budgets *(tons per ozone season weekday)*	
	NOx	VOC
2018*	31.890	27.574
2028	31.890	27.574
2030	31.890	27.574
2040	31.890	27.574

** Budgets specified in 72 FR 30490, effective June 1, 2007.*

Since Section 93.118 the conformity rule requires budgets established "for the most recent prior year" to apply for years for which budgets have not been "specifically established", the 2018 budgets as listed are also applicable for the subsequent years.

For this analysis, the year 2018 was selected for modeling as it is a year for which the maintenance plan specifies budgets. The year 2040 was selected for modeling as it is the horizon year for the transportation plan. To meet the interim year requirement (ten-year limit), the years 2028 and 2030 were also selected for modeling.

2.3 Transportation Demand Forecasting (CUBE Voyager Model)

The Hampton Roads regional travel demand model (TDM) represents an advanced practice four-step forecasting model to support air quality analysis and project planning in the Hampton Roads region. The TDM utilizes a CUBE Voyager platform that includes trip generation, trip distribution, mode split, and traffic assignment. The TDM covers the Counties of Gloucester, Isle of Wight, James City, and York, as well as the Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Williamsburg, and Virginia Beach. The TDM satisfies the requirements enumerated in 40 CFR 93.110 as well as the related requirements in 40 CFR 93.122 as summarized below. It was validated and calibrated for 2009 traffic volumes and land use conditions [40 CFR 93.122(b)(1)(i)][68].

Consistent with the requirements of federal conformity rule, all regionally significant projects in service or open to traffic in the year of analysis are included in the modeling [40 CFR 93.122(a)]. Roadway data input by the user (e.g., road segment length, capacity, number of lanes, and free-flow speeds by facility type) are used to create a representation of the regional transportation system for each analysis year, which includes all regionally significant projects identified for the Plan and TIP. A transportation

[67] While the budget for 2018 applies for all subsequent modeling years, the year 2018 is only tentatively selected for modeling for this analysis pending EPA guidance.

[68] Documentation relating to the validation and calibration process may be obtained from VDOT Transportation and Mobility Planning.

system network is developed for all motorized modes of travel including single-occupant vehicle, high or multi-occupant vehicle (HOV), bus transit, and light rail transit. Following network development, travel time and cost estimates for all networks modeled are tabulated for use in subsequent model steps.

Trip making activity is estimated in the trip generation and trip distribution steps. Trip generation uses land use information aggregated by traffic analysis zone (TAZ), estimated trip rates, and standard equations to estimate the number of trips that will be generated by and attracted to each TAZ. The TAZ trip data are then used in the trip distribution step that links trip origins with trip destinations to create trip tables, which are disaggregated for work and non-work trip purposes. Trips that leave or pass through the Hampton Roads region were also estimated, using observed 2009 traffic counts at major exit points of the region, and expanded based on forecast traffic counts at those locations in future years.

Trip tables from trip distribution along with network-based travel time and cost data [40 CFR 93.122(b)(1)(v, vi)] are input to the mode split step to estimate trip tables by trip purpose and mode. In the mode split step, nested-logit equations are applied to allocate trips between auto and transit modes. Individual trip tables are created for auto and transit modes. Prior to traffic assignment, trip tables are processed to apply standard auto occupancy rates, convert the tables from model-based production-attraction format to standard origin-destination format, and aggregate results.

Finally, in the traffic assignment step, the trip tables are loaded onto the appropriate highway or transit network and the model run to produce forecasts for traffic volumes for each roadway or transit link. Highway assignment utilizes a capacity restraint formula to simulate congestion effects on the roadway system [40 CFR 93.122(b)(1)(iv)]. The model makes route decisions based upon the estimated level of roadway congestion, redirecting trips to less congested routes until equilibrium is achieved (i.e., when shifting trips to alternative routes will no longer realize any time savings).

Output from the highway assignment is a network file that includes the assigned roadway volumes for each roadway link. Transit assignment is based upon best available route and does not have a modeled congestion process. The assigned volumes are applied to generate VMT estimates.

This overall modeling process is applied for each analysis year. Key inputs to the TDM are reviewed below.

2.3.1 Socioeconomic Forecasts

The HRTPO developed the socioeconomic data to be used in the conformity analysis using the Regional Economic Models, Inc. (REMI) econometric model. The REMI model is a conjoined input-output and econometric model widely used by local, state and federal governments, colleges and universities, consulting firms and others for economic forecasting including impact analyses.

Following standard practice for the development of socioeconomic forecasts, the REMI model was applied to develop "control totals" for key parameters such as population and employment for the Hampton Roads area. The HRTPO then sub-allocated the regional control totals generated with the REMI model to the local or jurisdiction level for the Hampton Roads area. The sub-allocations were reviewed by each locality and

adjustments were made where appropriate [40 CFR 93.110; 40 CFR 93.122(b)(1)(iiii)].

Participants in this process included the Counties of Gloucester, Isle of Wight, James City, and York, as well as the Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Williamsburg, and Virginia Beach. Representatives of these jurisdictions distributed the regional population and employment projections to the TAZs used in the transportation model, covering the LRTP Study Area.

Exhibit 2-3 presents the socioeconomic forecasts underlying the travel demand forecasts developed for this conformity analysis. The forecasts (including interim years and sub-allocations as appropriate) represent the latest projections available and approved for use with the 2040 LRTP [40 CFR 93.110(a,b); 40 CFR 93.122(b)(1)(ii)]. More detailed data are presented in Appendix A.

Exhibit 2-3: Socioeconomic Forecasts*

Year	Hampton Roads Modeling Area			
	Population	Households	Autos	Total Employment
2018	1,733,166	650,101	1,365,329	1,101,591
2028	1,850,806	698,085	1,478,787	1,170,236
2030	1,874,347	707,694	1,501,488	1,183,977
2040	1,992,000	755,700	1,614,900	1,252,600

Source: HRTPO Communication, 5/30/2018

* *The projections for 2040 were adopted by the Hampton Roads TPO in November 2012. The projections for other years were developed by interpolation, by TAZ, between 2009 and 2040, by TPO staff. 2018 is tentatively included pending guidance from EPA.*

2.3.2 Transit Service

Transit operating policies (including fares and service levels) and modeling for transit (ridership) have not changed significantly since the previous conformity determination [40 CFR 93.110(c) and (d)]. Light rail service is included in the modeling networks. Transit service and fares as well as road and bridge tolls are addressed in more detail in supporting documentation for the Plan and associated modeling. While future transit ridership is effectively determined in the course of modeling for the conformity analysis, details on current transit operating policies including fares and service levels may be found on the Hampton Roads Transit (HRT), Williamsburg Area Transportation Authority (WATA), and Suffolk Transit websites[69].

In brief, local transit fares have not changed significantly since the last conformity analysis for either HRT or WATA. Suffolk Transit is a new transit provider that began service since the last conformity analysis.

- For HRT, the current single ticket fare for local bus and the TIDE light rail service is $2.00; for seniors (60 and over) and the disabled, a reduced fare of $1.00 applies. A day pass (the Go Pass) which was introduced in 2008 is $4.50 for a

[69] See https://gohrt.com/, http://gowata.org/ and http://www.suffolkva.us/429/Suffolk-Transit respectively..

one-day pass. In keeping with the Americans with Disabilities Act (ADA), door-to-door service is also available for Certified Paratransit Users for no fee.

- For WATA, the fare for a one-way trip is $1.50; for seniors (60 and over) and disabled, a reduced fare of $0.75 applies. An all-day pass (for unlimited trips) is also available for a fare of $3.00. In keeping with the ADA, door-to-door service is also available for those unable to use bus at a fare of $3.00 per one-way trip.
- For Suffolk Transit, the fare for a one-way trip is $1.50; for seniors (55 and over) and disabled, a reduced fare of $0.75 applies. An all-day pass (for unlimited trips) is also available for a fare of $3.00. In keeping with the ADA, door-to-door service is also available for those unable to use bus at a fare of $3.00 per one-way trip.

Finally, express bus service modeling includes the "Max" service, with fares currently $4.00 one-way, converted to constant 2009 dollars.

2.3.3 Project Lists & Regional Network Development

The federal conformity rule at 40 CFR 93.122(a) requires that "*General requirements. (1) The regional emissions analysis … for the transportation plan, TIP… must include all regionally significant projects expected in the nonattainment or maintenance area. The analysis shall include FHWA/FTA projects proposed in the transportation plan and TIP and all other regionally significant projects which are disclosed to the MPO as required by Sec. 93.105.*"

Regionally significant projects are defined in the federal conformity rule and generally include arterials and higher-level facilities (freeways, expressways, interstates) that serve a regional function and are typically coded in the transportation model network for transportation analyses. Minor arterials, collectors, or local streets are usually only coded in the model if they enhance the capability of the traffic model to route trips on the network.

All regionally significant and/or federally funded or approved projects identified in the Plan and Program were incorporated into the respective highway networks for each analysis year for this conformity analysis. The project list for the Plan and TIP was subjected to Interagency Consultation Group review (pursuant to Section 93.105 and the corresponding state regulation), as documented in the chapter on consultation. Each network is a representation of the region's highway system as it is likely to appear by the specified year. Similarly, the transit network for each scenario and analysis year is coded to estimate transit volumes and ridership.

Since regional emission analyses are performed for multiple analysis years as needed for the conformity determination, the transportation networks were coded to include all regionally significant projects specified or included in the Plan and Program and open to traffic in each year modeled. Appendix E presents the list of regionally significant projects for modeling.

Projects were coded in the networks based on the first analysis year in which the project would be open to traffic or operational. For the most part, project opening dates were determined at the District level based upon detailed project information provided by either the localities or the associated VDOT project manager. In cases where that level of detail in scheduling was not available, reasonable assumptions were made. For example, completion dates where otherwise not available were estimated by adding three years to the advertisement date for major projects. Shorter times were allocated as

appropriate for the completion of minor projects.

2.3.5 Treatment of Off-Network Facilities (Local Roads)

Local roads are not typically coded in regional transportation model networks. In the Hampton Roads CUBE Voyager model, most local roadways are not coded, although some local streets are included to provide appropriate connectivity in the network. The travel demand model output is also not directly adjusted to account for traffic on local facilities. Instead, traffic for local facilities are addressed in the VDOT pre-processor. See Section 2.5 for more information on the adjustments for local roads.

2.3.6 Optional Off-line Analyses

Some transportation projects that have a potentially significant impact on regional air quality cannot be coded into the transportation modeling network. These are categorized as "off-line projects" and are analyzed using a variety of methodologies that include elasticity/pivot-point analysis and the use of traffic engineering principles to estimate their traffic and emission impacts.

Off-line analyses for Hampton Roads would include transit bus replacements, Congestion Mitigation and Air Quality (CMAQ) funded projects, van pools, and park-and-ride lots. However, as these adjustments would be expected to reduce modeled emissions, they were not needed to demonstrate conformity and were not applied for this analysis.

2.4 Emission Modeling

This section presents the selection of the latest emission model as well as key inputs for that model. As noted on the MOVES web page: "*EPA's MOtor Vehicle Emission Simulator (MOVES) is a state-of-the-science emission modeling system that estimates emissions for mobile sources at the national, county, and project level for criteria air pollutants, greenhouse gases, and air toxics.*"[70]

2.4.1 Latest Emission Model

The federal conformity rule at 93.111(a) requires the use of the latest emission model as follows: "*The conformity determination must be based on the latest emission estimation model available.*"[71] At the time of preparation of this analysis, the latest emission model specified by EPA for use in SIP development and conformity applications is the Motor Vehicle Emission Simulator (MOVES)[72]. The latest version of the model is MOVES2014a[73].

2.4.2 Emission Control Programs

Exhibit 2-4 lists emission control programs in effect for the Hampton Roads area, which

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[70] Ibid

[71] Federal Conformity Rule, 40 CFR 93.111 Criteria and Procedures: Latest Emissions Model http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.111.htm

[72] EPA MOVES Web Site: https://www.epa.gov/moves

[73] https://www.epa.gov/moves/moves2014a-latest-version-motor-vehicle-emission-simulator-moves

are reflected in the modeling for this conformity analysis. The locality-specific emission model input parameters are consistent with the approved maintenance SIP and based on the latest planning assumptions.

The region does not have emission inspection and maintenance or anti-tampering programs in place. Therefore, consistent with the modeling presented in the VDEQ Technical Support Document for the 2007 maintenance plan, inspection and maintenance or anti-tampering programs were not included in the modeling for this analysis.

Emission control programs for Hampton Roads as modeled or otherwise accounted for in this analysis include:

- Reformulated Gasoline (RFG), and Gasoline Reid Vapor Pressure (RVP): RFG was modeled for all jurisdictions within the maintenance area with the exception of the Counties of Gloucester and Isle of Wight, which use conventional gasoline. RFG benefits were modeled for all analysis years, consistent with Virginia regulations requiring RFG and the Maintenance Plan. Consistent with EPA guidance, fuel default data as specified in the MOVES model were applied for the analysis and represent the best estimate for in-use fuel properties for each modeling year including the effects of all applicable fuel quality regulations.

Exhibit 2-6: Emission Control Programs

Programs	2018	2028	2030	2040
Reformulated Gasoline*	Yes	Yes	Yes	Yes
RVP (PSI)**:				
• All jurisdictions but Gloucester and Isle of Wight	6.8	6.8	6.8	6.8
• Gloucester and Isle of Wight	8.4	8.4	8.4	8.4
2007 HDDV Program	Yes	Yes	Yes	Yes
NLEV Early Implementation	Yes	Yes	Yes	Yes
Tier 2 Standards	Yes	Yes	Yes	Yes
Tier 3 Standards***	Yes	Yes	Yes	Yes

** Reformulated gasoline applied for all jurisdictions except for the counties of Gloucester and Isle of Wight, which use conventional gasoline.*
*** All fuel properties as specified in MOVES default inputs for fuel by jurisdiction and modeling year.*
**** Tier 3 standards are in addition to the requirements of the Maintenance Plan.*

- 2007 Heavy Duty Diesel Vehicle (HDDV): The 2007 Heavy Duty Diesel Vehicle (HDDV) program including the implementation of ultra-low sulfur diesel was included in the generation of emission factors for the conformity analysis. Excerpted from the 2007 regulatory announcement[74]:

  "New Standards for Heavy-Duty Highway Engines and Vehicles

  [EPA is] finalizing a PM emissions standard for new heavy-duty engines of 0.01 grams per brake-horsepower-hour (g/bhp-hr), to take full effect for diesels in the 2007 model year. [EPA is] also finalizing standards for NOx and non-methane hydrocarbons (NMHC) of 0.20 g/bhp-hr and 0.14 g/bhp-hr, respectively. These NOx and NMHC standards will

[74] US EPA, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, EPA420-F-00-057, Office of Transportation and Air Quality, December 2000.

be phased in together between 2007 and 2010, for diesel engines. The phase-in will be on a percent of-sales basis: 50 percent from 2007 to 2009 and 100 percent in 2010.

Gasoline engines will be subject to these standards based on a phase in requiring 50 percent compliance in the 2008 model year and 100 percent compliance in the 2009 model year.

The program includes flexibility provisions to facilitate the transition to the new standards and to encourage the early introduction of clean technologies, and adjustments to various testing and compliance requirements to address differences between the new technologies and existing engine based technologies.

New Standards for Diesel Fuel

Refiners will be required to start producing diesel fuel for use in highway vehicles with a sulfur content of no more than 15 parts per million (ppm), beginning June 1, 2006. At the terminal level, highway diesel fuel sold as low sulfur fuel will be required to meet the 15 ppm sulfur standard as of July 15, 2006. For retail stations and fleets, highway diesel fuel sold as low sulfur fuel must meet the 15 ppm sulfur standard by September 1, 2006.

This program includes a combination of flexibilities available to refiners to ensure a smooth transition to low sulfur highway diesel fuel."

- National Low Emission Vehicle (NLEV) Program Early Implementation: Early implementation of the NLEV program was included in the modeling for the conformity analysis. The NLEV program, finalized by EPA in March 1998, implemented cleaner light-duty gasoline vehicles beginning in model year 1999 throughout Virginia.

- Tier 2 Vehicle Emission Standards: EPA Tier 2 vehicle emission standards implementation beginning with the 2004 model year was specified for the modeling for the conformity analysis. Gasoline sulfur levels as required for the Tier 2 standards were incorporated into the modeling. Excerpted from the supplementary information included with the final Tier 2 rule[75]:

  "Highlights of the Tier2/Gasoline Sulfur Program
  For cars, and light trucks, and larger passenger vehicles, the program will—
  - *Starting in 2004, through a phase in, apply for the first time the same set of emission standards covering passenger cars, light trucks, and large SUVs and passenger vehicles. …*
  - *Introduce a new category of vehicles, "medium-duty passenger vehicles," thus bringing larger passenger vans and SUVs into the Tier 2 program.*
  - *During the phase-in, apply interim fleet emission average standards that match or are more stringent than current federal and California "LEV I" (Low-Emission Vehicle, Phase I) standards.*
  - *Apply the same standards to vehicles operated on any fuel.*
  - *Allow auto manufacturers to comply with the very stringent new standards in a flexible way while ensuring that the needed environmental benefits occur.*
  - *Build on the recent technology improvements resulting from the successful National Low-Emission Vehicles (NLEV) program and improve the performance of these vehicles through lower sulfur gasoline.*
  - *Set more stringent particulate matter standards.*

[75] US EPA, 65 FR 6698, 40 CFR Parts 80, 85, and 86, Control of Air Pollution From New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements; Final Rule, February 10, 2000. Published in four sections spanning pages 6697-6870.

- *Set more stringent evaporative emission standards.*

For commercial gasoline, the program will—

- *Significantly reduce average gasoline sulfur levels nationwide as early as 2000, fully phased-in in 2006. Refiners will generally add refining equipment to remove sulfur in their refining processes. Importers of gasoline will be required to import and market only gasoline meeting the sulfur limits.*

…

- *Enable the new Tier 2 vehicles to meet the emission standards by greatly reducing the degradation of vehicle emission control performance from sulfur in gasoline. Lower sulfur gasoline also appears to be necessary for the introduction of advanced technologies that promise higher fuel economy but are very susceptible to sulfur poisoning (for example, gasoline direct injection engines).*
- *Reduce emissions from NLEV vehicles and other vehicles already on the road."*

- Tier 3 Vehicle Emission Standards: Excerpted from the March 2014 EPA fact sheet[76]:

"EPA Sets Tier 3 Motor Vehicle Emission and Fuel Standards

The U.S. Environmental Protection Agency (EPA) is finalizing an important rule designed to reduce air pollution from passenger cars and trucks. Starting in 2017, Tier 3 sets new vehicle emissions standards and lowers the sulfur content of gasoline, considering the vehicle and its fuel as an integrated system.

The Tier 3 vehicle standards reduce both tailpipe and evaporative emissions from passenger cars, light-duty trucks, medium-duty passenger vehicles, and some heavy-duty vehicles.

The Tier 3 gasoline sulfur standard will make emission control systems more effective for both existing and new vehicles, and will enable more stringent vehicle emissions standards. Removing sulfur allows the vehicle's catalyst to work more efficiently. Lower sulfur gasoline also facilitates the development of some lower-cost technologies to improve fuel economy and reduce green- house gas (GHG) emissions, which reduces gasoline consumption and saves consumers money.

The tailpipe standards include different phase-in schedules that vary by vehicle class but generally phase in between model years 2017 and 2025. In addition to the gradual phase-in schedules, other flexibilities include credits for early compliance and the ability to offset some higher-emitting vehicles with extra-clean models."

2.4.2 MOVES Model Inputs

2.4.2.1 Mapping of MOVES Model Vehicle and Road Types

For reference, Exhibit 2-5 presents the mapping for vehicle types between the MOVES model and HPMS. Exhibit 2-6 presents the corresponding mapping for road types between the MOVES model and federal functional classes.

2.4.2.2 MOVES Model Input Summary

Exhibit 2-7 presents a summary of data and data sources for MOVES model inputs as applied in this analysis. Additional detail is provided in separate sections below for each

[76] https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-control-air-pollution-motor-vehicles-tier-3. *Direct*: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100HVZV.PDF?Dockey=P100HVZV.PDF

modeling input. Both national default data and region-specific inputs were applied. Region-specific inputs include meteorological data, emission control programs, and on-road fleet registration and traffic distribution data.

Exhibit 2-5: MOVES Source Types and HPMS Vehicle Types

Table 2
MOVES Source Types and HPMS Vehicle Types[19]

Source Type ID	Source Types	HPMS Vehicle Type ID	HPMS Vehicle Type
11	Motorcycle	10	Motorcycles
21	Passenger Car	25	Light Duty Vehicles - Short and Long Wheelbase
31	Passenger Truck		
32	Light Commercial Truck		
41	Intercity Bus	40	Buses
42	Transit Bus		
43	School Bus		
51	Refuse Truck	50	Single Unit Trucks
52	Single Unit Short-haul Truck		
53	Single Unit Long-haul Truck		
54	Motor Home		
61	Combination Short-haul Truck	60	Combination Trucks
62	Combination Long-haul Truck		

Source: Excerpted from US EPA, "MOVES2014 and MOVES2014a Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity", EPA-420-B-15-093, November 2015

Exhibit 2-6: Road Type Mapping

FFC	Federal Functional Class	MOVES RTypeID	MOVES Road Type
0	Off-Network	1	Off-Network
1	Rural Principal Arterial - Interstate	2	Rural Restricted Access
2	Rural Principal Arterial - Other	3	Rural Unrestricted Access
6	Rural Minor Arterial		
7	Rural Major Collector		
8	Rural Minor Collector		
9	Rural Local System		
11	Urban Principal Arterial - Interstate	4	Urban Restricted Access
12	Urban Principal Arterial - Other Freeways or Expressways		
14	Urban Principal Arterial - Other	5	Urban Unrestricted Access
16	Urban Minor Arterial		
17	Urban Collector		
19	Urban Local System		

Source: As applied for the VDOT Database Traffic Pre-Processor

A total of 52 MOVES modeling runs was conducted for this analysis, covering four modeling years for each of the thirteen jurisdictions in the Hampton Roads maintenance area. A sample of a MOVES model run specification file (which documents model inputs)

as applied in this conformity analysis is provided in Appendix C.

For context, to the extent feasible and appropriate, MOVES model inputs were taken from or otherwise made consistent with those applied in the most recent (2014) National Emission Inventory (NEI Version 2, or NEI v2), which were specified by EPA based on inputs provided by VDEQ (in their original submittal for the 2014 NEI) as well as data collected in support of national-level studies (e.g., from the Coordinating Research Council (a joint research initiative established by the auto and oil industries) and IHS/Polk data.

Exhibit 2-7: MOVES2014a Input Summary

Parameter	**MOVES Input**
Scale	County/Inventory
Time Spans	Years: Budget year 2018, LRTP horizon year 2040, and interim years 2028 & 2030 (both less than ten years from the budget & horizon years). Month, Day & Hour: July, Weekday, all hours (00:00-00:59 to 23:00-23:59)
Geographic Bounds	All Hampton Roads Jurisdictions (13 Cities and Counties, each individually modeled for each modeling year)
Vehicle Type VMT	*HRTPO TDM forecast VMT by link for each jurisdiction, with adjustment for HPMS base year (2009) calibration and for an ozone season weekday. HPMS data projected to the modeling year were used for local roads. VMT Fractions from 2014 NEI v2 inputs for Hampton Roads, for which the hour- and day-VMT fractions (but not the month-fractions) were EPA-specified CRC data.*
Hotelling	*MOVES Defaults*
I/M Programs	*n/a*
Retrofit Data	*MOVES Defaults*
Ramp Fraction	*MOVES Defaults*
Road Type Distribution	*Derived from HRTPO TDM forecasts (and HPMS data projected to the modeling year for local roads) for each modeling year & jurisdiction.*
Source (Vehicle) Type Population	*Projected using annual average growth rates for each modeling year from the VDEQ NEI data for 2014.*
Starts	*MOVES Defaults*
Age (Vehicle Registration) Distribution	*2014 NEI v2 EPA-specified data for each Hampton Roads jurisdiction, which were based on IHS/Polk data.*
Average Speed Distribution	*Derived from HRTPO TDM forecasts (and HPMS data projected to the modeling year for local roads) for each modeling year & jurisdiction.*
Fuels	*MOVES Defaults for each jurisdiction in Hampton Roads, generally consistent with the VDEQ NEI inputs.*
Meteorology Data	*Data for July as specified in the VDEQ 2007Maintenance Plan*
Vehicles/Equipment	Consistent with those specified in the VDEQ 2014 NEI v2 Inputs for Hampton Roads Jurisdictions
Road Types	All
Pollutants and Processes	*NOx*: Running, Start & Extended Idle Exhaust, Crankcase Running, Start & Extended Idle Exhaust , and Auxiliary Power Equipment *VOC*: As with NOx, plus Evaporative Fuel Permeation, Fuel Vapor Venting, and Fuel Leaks.
Output	Units: grams, joules, and miles Activity: distance travelled and others.

2.4.2.3 Detailed MOVES Model Inputs

2.4.2.3.1 VMT Forecasts

Two adjustments were made to the VMT forecasts provided by HRTPO: 1) the HPMS base year model adjustment, and 2) accounting for local roads. These adjustments are summarized below, followed by tabulations of the final VMT and VMT fractions as applied for emission modeling in this analysis.

2.4.2.3.1.1 HPMS Base Year Model Adjustment Factor

The conformity rule at 40 CFR 93.122(b)(3) specifies that factors determined from base year travel demand model comparisons to Highway Performance Monitoring Systems (HPMS) data may be applied to adjust future VMT forecasts. Such a comparison was conducted for the model validation or base year of 2009 for Hampton Roads, with the results presented in Appendix B. In brief, the HRTPO travel demand model/HPMS adjustment factor was determined as follows:

1) For the model validation or base year (2009), the ratio of HPMS to HRTPO TDM-based estimates for daily VMT was determined. All roads were included in this calculation except local streets, which are generally not included in the HRTPO model. For the Hampton Roads maintenance area, the ratio using 2009 data was determined to be approximately 0.8962.

2) Since the Hampton Roads TDM generates estimates for annual average *weekday* traffic volumes, while the VDOT Traffic Management System / HPMS data represent annual average *daily* traffic volumes, a conversion factor is needed for annual average weekday VMT (AAWDVMT) to annual average daily VMT (AADVMT) for all road types (excluding local). Using data for 2009, the AAWDVMT/AADVMT conversion factor or ratio for Hampton Roads was determined to be approximately 1.0507.

3) The model adjustment factor for Hampton Roads for the base or model validation year of 2009 was calculated as the product of the results from the preceding two steps (i.e., 0.8962 x 1.0507), and determined to be 0.9417. This factor was applied to the VMT forecasts derived from the HRTPO TDM for all roads except local streets, to obtain VMT data for input to the MOVES model for the emission calculations.

2.4.2.3.1.2 Adjustments for Off-Network Facilities (Local Roads)

The federal conformity rule at 40 CFR 93.122(a) requires that "*…Projects which are not regionally significant are not required to be explicitly modeled, but vehicle miles traveled (VMT) from such projects must be estimated in accordance with reasonable professional practice.*" All regionally significant projects are included in the network modeling as summarized previously. However local roadways are not typically coded in regional transportation model networks and are not coded in the regional network model developed for Hampton Roads.

The VDOT pre-processor was therefore designed to generate estimates for VMT for

these minor facilities, projecting future traffic volumes using traffic count data for a base year and average annual growth rates applicable through the horizon year of the LRTP for the region. The base year VMT data for local roads were obtained for 2016 from the VDOT TMS/HPMS database. Exhibit 2-8 presents forecast annual average growth rates for local road VMT for the Hampton Roads area. As an approximation, the rates were taken as equivalent to the annual average growth rates reported with the socioeconomic data for auto ownership in Hampton Roads.

Exhibit 2-8: Annual Average Growth Rates for Local Road VMT

Jurisdiction	Annual Average Growth Rate (%)
Chesapeake	1.00901
Gloucester	0.99643
Hampton	1.00202
Isle of Wight	1.00864
James City	1.01142
Newport News	1.00518
Norfolk	1.00951
Poquoson	0.99566
Portsmouth	1.00498
Suffolk	1.01974
Virginia Beach	1.00611
Williamsburg	1.02264
York	1.439

2.4.2.3.1.3 VMT and VMT Fractions

Exhibit 2-9 presents the VMT forecasts for an average ozone season weekday by year and jurisdiction. The adjustments noted above for HPMS base year (2009) calibration and local roads were applied in the calculation of these forecasts.

Exhibits 2-10, 2-11 and 2-12 present respectively sample data used for the month, day and hour VMT fractions for MOVES emission modeling. The day- and hour- VMT fractions (but not the month VMT fractions) correspond to EPA-specified CRC data for the 2014 NEI v2 inputs for Hampton Roads.

Exhibit 2-9: VMT Forecasts

Jurisdiction	Ozone Season Weekday VMT			
	2018	2028	2030	2040
Chesapeake	7,769,982	8,664,728	8,818,955	9,661,179
Gloucester County	1,038,782	1,153,930	1,176,408	1,305,600
Hampton	4,008,160	4,324,617	4,356,171	4,521,480
Isle of Wight County	1,340,896	1,494,774	1,527,441	1,653,878
James City County	2,158,243	2,406,660	2,453,933	2,693,972
Newport News	5,055,765	5,339,214	5,391,900	5,667,877
Norfolk	6,601,090	7,162,710	7,226,820	7,645,520
Poquoson	146,412	148,511	148,292	147,533
Portsmouth	1,821,969	1,999,107	2,034,610	2,237,199
Suffolk	4,026,777	4,617,469	4,732,957	5,385,339
Virginia Beach	9,282,359	9,982,946	10,165,676	10,755,248
Williamsburg	452,877	453,219	457,512	486,506
York County	2,572,926	2,852,482	2,897,689	3,130,305
Total Ozone Season Weekday VMT	**46,276,239**	**50,600,366**	**51,388,364**	**55,291,635**

Exhibit 2-10: Sample Month VMT Fractions

sourceTypeID	monthID	monthVMTFraction
11	7	0.12874
21	7	0.09098
31	7	0.09098
32	7	0.09098
41	7	0.07847
42	7	0.07847
43	7	0.07847
51	7	0.08496
52	7	0.08496
53	7	0.08496
54	7	0.08496
61	7	0.08496
62	7	0.08496

Source: 2014 NEI v2 (Data for Virginia Beach for July)

Exhibit 2-11: Sample Day VMT Fractions

sourceTypeID	monthID	roadTypeID	dayID	dayVMTFraction
21	7	1	5	0
21	7	2	5	0.638927
21	7	3	5	0.569497
21	7	4	5	0.70472
21	7	5	5	0.725047

Source: 2014 NEI v2 (Passenger car weekday data for all road types, for Virginia Beach in July)

Exhibit 2-12: Sample Hour VMT Fractions

sourceTypeID	roadTypeID	dayID	hourID	hourVMTFraction
21	4	5	1	0.00443714
21	4	5	2	0.00382141
21	4	5	3	0.00292167
21	4	5	4	0.00355117
21	4	5	5	0.00369218
21	4	5	6	0.0121837
21	4	5	7	0.0362179
21	4	5	8	0.0746605
21	4	5	9	0.0902513
21	4	5	10	0.0575712
21	4	5	11	0.0480207
21	4	5	12	0.0580978
21	4	5	13	0.0583817
21	4	5	14	0.0625746
21	4	5	15	0.0604816
21	4	5	16	0.0712689
21	4	5	17	0.0875565
21	4	5	18	0.0919076
21	4	5	19	0.0634536
21	4	5	20	0.0355362
21	4	5	21	0.0281935
21	4	5	22	0.0205058
21	4	5	23	0.0152544
21	4	5	24	0.00945898

Source: 2014 NEI v2 (Passenger car weekday data for urban restricted access facilities, for Virginia Beach.)

2.4.2.3.2 Road Type Distributions

Exhibit 2-13 presents sample data for road type distributions. The data are for passenger cars in Virginia Beach in 2018.

2.4.2.3.3 Source (Vehicle) Type Population

Exhibit 2-14 presents sample data for vehicle or source type population. The data are for Virginia Beach in 2018.

Exhibit 2-13: Sample Road Type Distribution: 2018 Virginia Beach Passenger Cars

sourceTypeID	roadTypeID	roadTypeVMTFraction
21	1	0.00000
21	2	0.00002
21	3	0.03794
21	4	0.24871
21	5	0.71333

Exhibit 2-14: Sample Source Type Population: 2018 Virginia Beach

sourceTypeID	sourceTypePopulation
11	12113
21	174065
31	120655
32	36450
41	52
42	15
43	782
51	61
52	9263
53	372
54	586
61	809
62	472

2.4.2.3.4 Fleet Registration (Age) Data

Exhibit 2-15 presents a sample of vehicle registration (age) distribution data for one jurisdiction (City of Virginia Beach). The data were taken from NEI v2 data for each jurisdiction for 2014 and applied for all modeling years.

2.4.2.3.5 Average Speed Distributions

The determination of average speed distribution by MOVES speed bin is made using standard adjustments for congested speeds, as presented below. Sample data are also presented.

Exhibit 2-15: Sample Vehicle Registration Distribution: Virginia Beach

Age*	EPA MOVES Model Source (Vehicle) Type ID												
	11	21	31	32	41	42	43	51	52	53	54	61	62
0	0.0070	0.1374	0.0293	0.4460	0.0000	0.0000	0.0288	0.0417	0.1426	0.0358	0.0175	0.0228	0.0730
1	0.0472	0.1011	0.0504	0.1390	0.0185	0.0185	0.0170	0.0000	0.0395	0.0418	0.0297	0.0140	0.0558
2	0.0524	0.0502	0.0467	0.0526	0.0463	0.0463	0.0957	0.0417	0.1723	0.0555	0.0210	0.0088	0.0558
3	0.0442	0.0364	0.0507	0.0296	0.0000	0.0000	0.0275	0.1250	0.0573	0.0424	0.0227	0.0018	0.0298
4	0.0364	0.0417	0.0466	0.0139	0.0000	0.0000	0.0183	0.2500	0.0057	0.0212	0.0035	0.0123	0.0246
5	0.0753	0.0371	0.0321	0.0125	0.0185	0.0185	0.1298	0.0000	0.0241	0.0266	0.0122	0.0298	0.0325
6	0.0806	0.0479	0.0572	0.0226	0.0185	0.0185	0.0301	0.0833	0.0562	0.0573	0.0315	0.0228	0.0225
7	0.1010	0.0543	0.0661	0.0308	0.0741	0.0741	0.1350	0.0417	0.1847	0.0634	0.0507	0.0772	0.0843
8	0.0884	0.0510	0.0660	0.0270	0.0556	0.0556	0.0092	0.1250	0.1219	0.0716	0.0699	0.0825	0.0602
9	0.0715	0.0484	0.0731	0.0246	0.0278	0.0278	0.0813	0.0833	0.0314	0.0607	0.0490	0.0965	0.0578
10	0.0567	0.0468	0.0769	0.0257	0.1019	0.1019	0.1468	0.0000	0.0208	0.0469	0.0769	0.0632	0.0323
11	0.0657	0.0474	0.0635	0.0245	0.0741	0.0741	0.0000	0.0000	0.0152	0.0417	0.0472	0.0263	0.0315
12	0.0481	0.0414	0.0581	0.0213	0.0278	0.0278	0.0459	0.0417	0.0135	0.0397	0.0455	0.0211	0.0222
13	0.0368	0.0369	0.0470	0.0179	0.0648	0.0648	0.0773	0.0000	0.0174	0.0470	0.0280	0.0439	0.0370
14	0.0279	0.0365	0.0454	0.0180	0.0185	0.0185	0.0852	0.0417	0.0173	0.0504	0.0437	0.0877	0.0558
15	0.0226	0.0279	0.0376	0.0150	0.0741	0.0741	0.0052	0.0000	0.0156	0.0457	0.0752	0.0737	0.0450
16	0.0156	0.0232	0.0275	0.0109	0.0833	0.0833	0.0066	0.0417	0.0096	0.0249	0.0507	0.0491	0.0341
17	0.0123	0.0207	0.0248	0.0099	0.0370	0.0370	0.0039	0.0000	0.0083	0.0281	0.0769	0.0404	0.0270
18	0.0127	0.0168	0.0181	0.0080	0.0093	0.0093	0.0066	0.0000	0.0059	0.0215	0.0297	0.0404	0.0296
19	0.0084	0.0164	0.0162	0.0081	0.0556	0.0556	0.0118	0.0000	0.0078	0.0271	0.0385	0.0526	0.0327
20	0.0079	0.0127	0.0134	0.0076	0.0093	0.0093	0.0039	0.0417	0.0057	0.0183	0.0280	0.0228	0.0251
21	0.0065	0.0101	0.0088	0.0050	0.0185	0.0185	0.0026	0.0000	0.0033	0.0146	0.0227	0.0263	0.0196
22	0.0050	0.0081	0.0065	0.0033	0.0000	0.0000	0.0066	0.0417	0.0027	0.0117	0.0122	0.0105	0.0135
23	0.0035	0.0065	0.0048	0.0027	0.0093	0.0093	0.0052	0.0000	0.0021	0.0125	0.0122	0.0070	0.0125
24	0.0035	0.0053	0.0047	0.0025	0.0093	0.0093	0.0039	0.0000	0.0033	0.0147	0.0210	0.0123	0.0147
25	0.0049	0.0042	0.0051	0.0031	0.0000	0.0000	0.0000	0.0000	0.0037	0.0132	0.0262	0.0123	0.0153
26	0.0043	0.0036	0.0043	0.0026	0.0185	0.0185	0.0013	0.0000	0.0024	0.0123	0.0175	0.0158	0.0130
27	0.0050	0.0036	0.0035	0.0024	0.0463	0.0463	0.0013	0.0000	0.0027	0.0103	0.0140	0.0070	0.0110
28	0.0068	0.0027	0.0030	0.0027	0.0278	0.0278	0.0026	0.0000	0.0019	0.0102	0.0070	0.0070	0.0089
29	0.0047	0.0027	0.0022	0.0019	0.0370	0.0370	0.0066	0.0000	0.0018	0.0090	0.0087	0.0070	0.0084
30	0.0372	0.0210	0.0106	0.0083	0.0185	0.0185	0.0039	0.0000	0.0030	0.0236	0.0105	0.0053	0.0146

Source: VDEQ data from the 2014 National Emission Inventory (NEI2)

** Vehicle age = calendar year minus model year, plus one.*

2.4.2.3.5.1 MOVES Speed Bins

For reference, the MOVES model requires average speeds to be entered by speed bins as defined for the model. MOVES speed bins are presented in Exhibit 2-16.

2.4.2.3.5.2 Adjustment for Congested Speeds

The speed estimates provided by the HRTPO TDM were adjusted using standard Bureau of Public Roads (BPR) formulae, which are based upon free flow speeds, volumes and capacity. Generally, free flow speed is taken as the speed at which a vehicle on the roadway segment would travel given no conflict with other traffic, i.e., no congestion. As traffic volumes increase and the carrying capacity of the roadway is reached (i.e. congestion increases), average speeds would be expected to be reduced. The free flow speeds used are consistent with those used in the regional network model.

Exhibit 2-16: US EPA MOVES Model Speed Bins

Table 3 MOVES Speed Bins		
Speed Bin ID	Average Bin Speed	Speed Bin Range
1	2.5	speed < 2.5mph
2	5	2.5mph <= speed < 7.5mph
3	10	7.5mph <= speed < 12.5mph
4	15	12.5mph <= speed < 17.5mph
5	20	17.5mph <= speed <22.5mph
6	25	22.5mph <= speed < 27.5mph
7	30	27.5mph <= speed < 32.5mph
8	35	32.5mph <= speed < 37.5mph
9	40	37.5mph <= speed < 42.5mph
10	45	42.5mph <= speed < 47.5mph
11	50	47.5mph <= speed < 52.5mph
12	55	52.5mph <= speed < 57.5mph
13	60	57.5mph <= speed < 62.5mph
14	65	62.5mph <= speed < 67.5mph
15	70	67.5mph <= speed < 72.5mph
16	75	72.5mph <= speed

Source: Excerpted from: US EPA," MOVES2014 and MOVES2014a Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity", EPA-420-B-15-093, November 2015

Two forms of the BPR equation are applied:

1) for non-signalized roadway segments:

$$speed\ \ for\ unsignalized\ \ facilities = \frac{corridor\ \ free\ flow\ speed}{1 + 0.2(volume / capacity)^{10}}$$

2) for signalized roadway segments, defined as facilities on which traffic signals are spaced two miles or less apart:

$$speed\ \ for\ signalized\ \ facilities = \frac{corridor\ \ free\ flow\ speed}{1 + 0.05(volume / capacity)^{10}}$$

2.4.2.3.5.3 Sample Average Speed Distributions

Exhibit 2-17 presents sample speed distributions by MOVES speed bin. The distributions were derived from HRTPO forecasts and, for local roads, HPMS data, all adjusted as noted above using BPR formulae. The sample distributions are for 2018 for Virginia Beach for two road types (urban restricted and unrestricted access facilities.)

Exhibit 2-17: Sample Source Type Speed Distributions: 2018 Virginia Beach Urban Restricted (RoadTypeID 4) and Unrestricted (RoadTypeID 5) Access Facilities

sourceTypeID	roadTypeID	hourDayID	avgSpeedBinID	avgSpeedFraction
ALL	4	ALL	1	0.00000
ALL	4	ALL	2	0.00000
ALL	4	ALL	3	0.00000
ALL	4	ALL	4	0.00000
ALL	4	ALL	5	0.00000
ALL	4	ALL	6	0.00052
ALL	4	ALL	7	0.11007
ALL	4	ALL	8	0.01525
ALL	4	ALL	9	0.01979
ALL	4	ALL	10	0.00000
ALL	4	ALL	11	0.00000
ALL	4	ALL	12	0.01418
ALL	4	ALL	13	0.25640
ALL	4	ALL	14	0.52232
ALL	4	ALL	15	0.06146
ALL	4	ALL	16	0.00000
ALL	5	ALL	1	0.00000
ALL	5	ALL	2	0.00000
ALL	5	ALL	3	0.15290
ALL	5	ALL	4	0.21114
ALL	5	ALL	5	0.00003
ALL	5	ALL	6	0.00047
ALL	5	ALL	7	0.07841
ALL	5	ALL	8	0.16207
ALL	5	ALL	9	0.24646
ALL	5	ALL	10	0.11987
ALL	5	ALL	11	0.02121
ALL	5	ALL	12	0.00742
ALL	5	ALL	13	0.00000
ALL	5	ALL	14	0.00000
ALL	5	ALL	15	0.00000
ALL	5	ALL	16	0.00000

2.4.2.3.6 Fuels

MOVES default data were applied for each jurisdiction in Hampton Roads for each modeling year. This approach is generally consistent with the VDEQ NEI inputs.

Exhibits 2-18(a) through 2-18(d) present respectively sample data for fuel supply, formulation, usage and AVFT (MOVES fuel type and vehicle technology table.) The sample data are for 2018 for Virginia Beach.

Exhibit 2-18(a): Sample Fuel Supply: July 2018 Virginia Beach

fuelRegionID	fuelYearID	monthGroupID	fuelFormulationID	marketShare	marketShareCV
1270011000	2018	7	90	1.0000000	0.5
1270011000	2018	7	3688	0.9746260	0.5
1270011000	2018	7	3690	0.0253739	0.5
1270011000	2018	7	25005	1.0000000	0.5
1270011000	2018	7	27002	1.0000000	0.5
1270011000	2018	7	28001	1.0000000	0.5

2.4.2.3.7 Meteorological Data

The federal conformity rule at 93.122(a)(6) requires that "*The ambient temperatures used for the regional emissions analysis shall be consistent with those used to establish the emissions budget in the applicable implementation plan....*"[77].

Exhibit 2-19 presents average hourly ambient temperature, hourly relative humidity, and barometric pressure data as presented in the Technical Support Document for the applicable implementation (maintenance) plan. The hourly data for ambient temperature and relative humidity along with the average daily value for barometric pressure were applied in this conformity analysis, consistent with the maintenance plan.

[77] Federal Conformity Rule, 40 CFR 93.122, *Procedures for Determining Regional Transportation-Related Emissions*: http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.122.htm

Exhibit 2-18(b): Sample Fuel Formulation: 2018 Virginia Beach

fuel Formulation ID	fuel Subtype ID	RVP	sulfur Level	ETOH Volume	MTBE Volume	ETBE Volume	TAME Volume	aromatic Content	olefin Content	benzene Content	e200	e300	BioDiesel Ester Volume	Cetane Index	PAH Content	T50	T90
10	10	6.9	30.0	0	. 0	0	0	26.10	5.60	1.00	41.09	83.09	0	0	0	218.000	329.000
20	20	0.0	11.0	0	. 0	0	0	0.00	0.00	0.00	0.00	0.00	0	0	0	0.000	0.000
30	30	0.0	7.6	0	. 0	0	0	0.00	0.00	0.00	0.00	0.00	0	0	0	0.000	0.000
50	51	7.7	11.0	85	. 0	0	0	0.00	0.00	0.00	49.90	89.50	0	0	0	200.000	300.000
90	90	0.0	0.0	0	. 0	0	0	0.00	0.00	0.00	0.00	0.00	0	0	0	0.000	0.000
96	10	8.7	338.0	0	. 0	0	0	26.40	11.90	1.64	50.00	83.00	0	0	0	199.816	329.409
97	10	6.6	150.0	0	11.7581	0	0	24.00	11.00	0.80	52.00	84.00	0	0	0	195.735	324.864
98	10	6.9	30.0	0	. 0	0	0	26.10	5.60	1.00	41.09	83.09	0	0	0	218.000	329.000
99	10	6.9	90.0	0	. 0	0	0	26.10	5.60	1.00	41.09	83.09	0	0	0	218.000	329.000
3688	12	6.9	10.0	10	. 0	0	0	20.13	11.76	0.54	50.35	83.81	0	0	0	199.100	325.720
3690	15	6.9	10.0	15	. 0	0	0	18.79	10.58	0.54	56.48	84.33	0	0	0	186.670	323.350
25005	21	0.0	15.0	0	. 0	0	0	0.00	0.00	0.00	0.00	0.00	5	0	0	0.000	0.000
27002	51	7.7	8.0	74	. 0	0	0	0.00	0.00	0.00	49.90	89.50	0	0	0	200.000	300.000
28001	30	0.0	7.6	0	. 0	0	0	0.00	0.00	0.00	0.00	0.00	0	0	0	0.000	0.000

Exhibit 2-18(c): Sample Fuel Usage: 2018 Virginia Beach

countyID	fuelYearID	modelYearGroupID	sourceBinFuelTypeID	fuelSupplyFuelTypeID	usageFraction
51810	2018	0	1	1	1.000000
51810	2018	0	2	2	1.000000
51810	2018	0	3	3	1.000000
51810	2018	0	5	1	0.923996
51810	2018	0	5	5	0.076004
51810	2018	0	9	9	1.000000

Exhibit 2-18(d): Sample AVFT Data (Excerpt of MOVES Defaults for 2015-2020): Virginia Beach Passenger Cars

sourceTypeID	modelYearID	fuelTypeID	engTechID	fuelEngFraction
21	2015	1	1	0.937289164
21	2015	2	1	0.011745962
21	2015	5	1	0.050964874
21	2015	9	30	0
21	2016	1	1	0.937234529
21	2016	2	1	0.011745962
21	2016	5	1	0.051019509
21	2016	9	30	0
21	2017	1	1	0.937115854
21	2017	2	1	0.011745962
21	2017	5	1	0.051138185
21	2017	9	30	0
21	2018	1	1	0.936412528
21	2018	2	1	0.011745962
21	2018	5	1	0.05184151
21	2018	9	30	0
21	2019	1	1	0.935253486
21	2019	2	1	0.011745962
21	2019	5	1	0.053000552
21	2019	9	30	0
21	2020	1	1	0.936415019
21	2020	2	1	0.011745962
21	2020	5	1	0.05183902
21	2020	9	30	0

Exhibit 2-19: Ambient Conditions - Ozone Season

Average Hourly Meteorological Data				
Time (EDT)	Temperature (F)	Dew Point (F)	Relative Humidity (%)	Pressure (In)
6:00 AM	71.77	66.4	83.9	30.017
7:00 AM	75.2	67.7	78.1	30.029
8:00 AM	77.8	68.09	72.7	30.033
9:00 AM	81.07	67.22	63	30.034
10:00 AM	83.04	66.91	58.5	30.034
11:00 AM	84.34	65.99	54.5	30.027
12:00 PM	85.79	65.04	50	30.019
1:00 PM	86.59	64.81	48.9	30.009
2:00 PM	87.4	64.09	46.6	29.996
3:00 PM	87.27	63.82	46	29.985
4:00 PM	87.6	63.22	44.7	29.978
5:00 PM	87.01	63.86	46.7	29.974
6:00 PM	85.51	63.99	49.1	29.973
7:00 PM	83.21	65.42	55.9	29.982
8:00 PM	79.39	68.16	69	29.99
9:00 PM	77.9	68.5	73.3	30.004
10:00 PM	77.02	68.08	74.5	30.006
11:00 PM	75.38	67.87	78.1	30.007
12:00 AM	73.31	66.4	79.8	30.006
1:00 AM	72.91	66.31	80.7	30.004
2:00 AM	72.71	66.49	81.7	29.997
3:00 AM	71.9	63.8	78.1	29.995
4:00 AM	71.2	65.5	82.8	29.995
5:00 AM	70.73	65.49	84.3	30.006
	Avg Min T	70.51		
	Avg Max T	88.01		
	Avg Pres	30.004		

Source: VDEQ, "Technical Support Document for the Re-designation Request and Maintenance Plan for Hampton Roads 8-Hour Ozone Nonattainment Area, Final", as approved June 1, 2007, 72 FR 30490. See Table 4.1-2 on age 64. Reproduced with permission.

2.4.2.3.8 Vehicles/Equipment

Exhibit 2-20 presents vehicle and fuel type combinations as applied in this analysis, which were specified consistent with those used in the VDEQ 2014 NEI v2 Inputs for Hampton Roads.

Exhibit 2-20: Vehicle and Fuel Combinations

Fuels:	Source Use Types:	Selections:
Compressed Natural Gas (CNG)	Combination Long-haul Truck	Compressed Natural Gas (CNG) - Transit Bus
Diesel Fuel	Combination Short-haul Truck	Diesel Fuel - Combination Long-haul Truck
Electricity	Intercity Bus	Diesel Fuel - Combination Short-haul Truck
Ethanol (E-85)	Light Commercial Truck	Diesel Fuel - Intercity Bus
Gasoline	Motor Home	Diesel Fuel - Light Commercial Truck
	Motorcycle	Diesel Fuel - Motor Home
	Passenger Car	Diesel Fuel - Passenger Car
	Passenger Truck	Diesel Fuel - Passenger Truck
	Refuse Truck	Diesel Fuel - Refuse Truck
	School Bus	Diesel Fuel - School Bus
	Single Unit Long-haul Truck	Diesel Fuel - Single Unit Long-haul Truck
	Single Unit Short-haul Truck	Diesel Fuel - Single Unit Short-haul Truck
	Transit Bus	Diesel Fuel - Transit Bus
		Electricity - Light Commercial Truck
		Electricity - Passenger Car
		Electricity - Passenger Truck
		Ethanol (E-85) - Light Commercial Truck
		Ethanol (E-85) - Passenger Car
		Ethanol (E-85) - Passenger Truck
		Gasoline - Combination Short-haul Truck
		Gasoline - Light Commercial Truck
		Gasoline - Motor Home
		Gasoline - Motorcycle
		Gasoline - Passenger Car
		Gasoline - Passenger Truck
		Gasoline - Refuse Truck
		Gasoline - School Bus
		Gasoline - Single Unit Long-haul Truck
		Gasoline - Single Unit Short-haul Truck
		Gasoline - Transit Bus

Source: Screenshot of MOVES model input for Virginia Beach 2018

2.6 Modeling Results

This section presents the emission forecasts for NO_x and VOC generated using the US EPA MOVES2014a model for this conformity analysis following the methodology summarized previously in this chapter. Also presented in this section for reference purposes are summary statistics derived from the results of the analysis, including regional average emissions per mile, capita and household for each year modeled.

2.6.1 Emission Forecasts & Budget Test Results

Exhibits 2-21(a) and (b) respectively present the emission forecasts for NO_x and VOC generated using the US EPA MOVES model and the methodology summarized previously in this chapter. The forecasts are presented graphically (in bar chart format) in comparison to the applicable motor vehicle emission budgets for each year. As the emission forecasts are lower than the applicable budgets for all years tested, the emission budget tests specified in the federal conformity rule are passed.

Exhibit 2-21(a): Motor Vehicle Emission Budget Test Results for NO_x

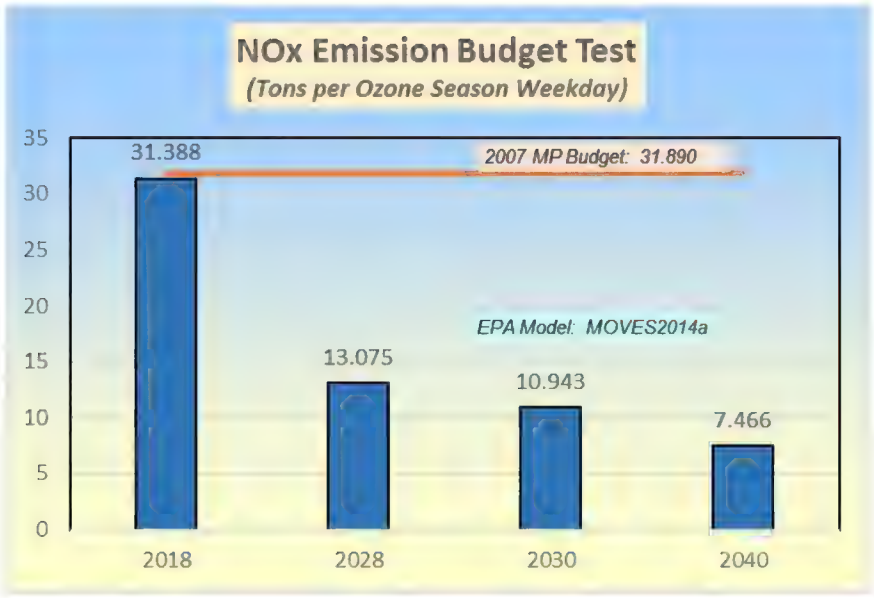
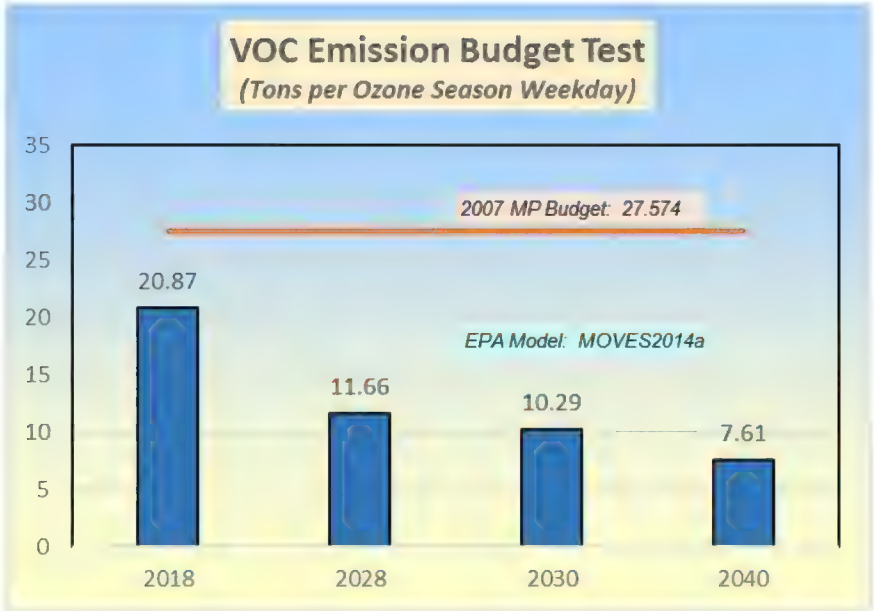


Exhibit 2-21(b): Motor Vehicle Emission Budget Test Results for VOC



2.6.2 Summary Statistics

Exhibit 2-22 presents, for reference, a tabulation of summary statistics derived from the results of the conformity analysis. In addition to total VMT and emissions, the tabulation of summary statistics includes regional average emissions per vehicle mile travelled, per vehicle, per capita, per household and per member of the labor force (employee) for each year analyzed. The forecasts are indexed to the base year for the analysis (2018) to show the relative changes over time.

Exhibits 2-23(a) through (f) present the same forecasts in graphical format. In each case, the trend in emissions is downward initially but then flattens. The downward trend is a result of the implementation of more stringent vehicle emission and fuel quality standards as reviewed in Chapter 1. Since fleet turnover to vehicles constructed to meet the more stringent standards takes time to be fully implemented, the benefits in terms of reduced emissions also takes time to be fully realized.

In the long run, without the introduction of additional new more stringent vehicle emission and/or fuel quality standards, the trend in vehicle emissions may be expected to turn upward given continued growth in VMT.

Exhibit 2-22: Summary Statistics

Parameter	2018	(Index)	2028	(Index)	2030	(Index)	2040	(Index)
Forecasts:								
VMT (millions/ozone season weekday):	46.3	*(100.0)*	50.6	*(109.3)*	51.4	*(111.0)*	55.3	*(119.5)*
NOx (tons/ozone season weekday):	31.4	*(100.0)*	13.1	*(41.7)*	10.9	*(34.9)*	7.5	*(23.8)*
VOC (tons/ozone season weekday):	20.9	*(100.0)*	11.7	*(55.9)*	10.3	*(49.3)*	7.6	*(36.5)*
Derived Statistics*:								
NOx (grams per VMT)	0.62	*(100.0)*	0.23	*(38.1)*	0.19	*(31.4)*	0.12	*(19.9)*
VOC (grams per VMT)	0.41	*(100.0)*	0.21	*(51.1)*	0.18	*(44.4)*	0.12	*(30.5)*
Ozone Season Weekday VMT (per vehicle)	33.89	*(100.0)*	34.22	*(101.0)*	34.22	*(101.0)*	34.24	*(101.0)*
NOx (grams per day per vehicle)	20.86	*(100.0)*	8.02	*(38.5)*	6.61	*(31.7)*	4.19	*(20.1)*
VOC (grams per day per vehicle)	13.87	*(100.0)*	7.15	*(51.6)*	6.22	*(44.8)*	4.27	*(30.8)*
Ozone Season Weekday VMT (per capita)	26.70	*(100.0)*	27.34	*(102.4)*	27.42	*(102.7)*	27.76	*(104.0)*
NOx (grams per day per capita)	16.43	*(100.0)*	6.41	*(39.0)*	5.30	*(32.2)*	3.40	*(20.7)*
VOC (grams per day per capita)	10.92	*(100.0)*	5.71	*(52.3)*	4.98	*(45.6)*	3.46	*(31.7)*
Ozone Season Weekday VMT (per household)	71.18	*(100.0)*	72.48	*(101.8)*	72.61	*(102.0)*	73.17	*(102.8)*
NOx (grams per day per household)	43.80	*(100.0)*	16.99	*(38.8)*	14.03	*(32.0)*	8.96	*(20.5)*
VOC (grams per day per household)	29.12	*(100.0)*	15.15	*(52.0)*	13.19	*(45.3)*	9.13	*(31.4)*
Ozone Season Weekday VMT (per employee)	42.01	*(100.0)*	43.24	*(102.9)*	43.40	*(103.3)*	44.14	*(105.1)*
NOx (grams per day per employee)	25.85	*(100.0)*	10.14	*(39.2)*	8.38	*(32.4)*	5.41	*(20.9)*
VOC (grams per day per employee)	17.19	*(100.0)*	9.04	*(52.6)*	7.89	*(45.9)*	5.51	*(32.1)*

** Based upon: 1) emission forecasts generated using the US EPA model MOVES2014a, and 2) socioeconomic forecasts for for Hampton Roads for automobile ownership, population, households and employment provided by the HRTPO as applied for the 2040 LRTP.*

Exhibit 2-23(a): Regional Trends in VMT and Emissions

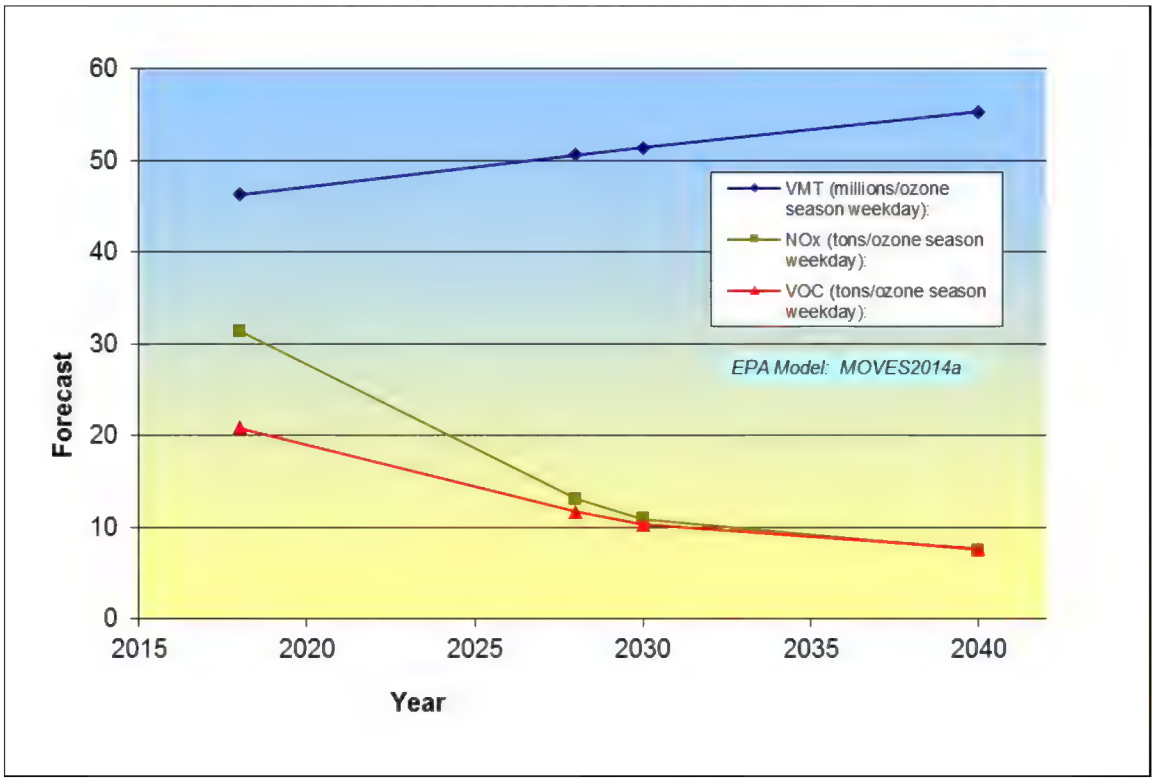


Exhibit 2-23(b): Regional Trends in Emissions per VMT

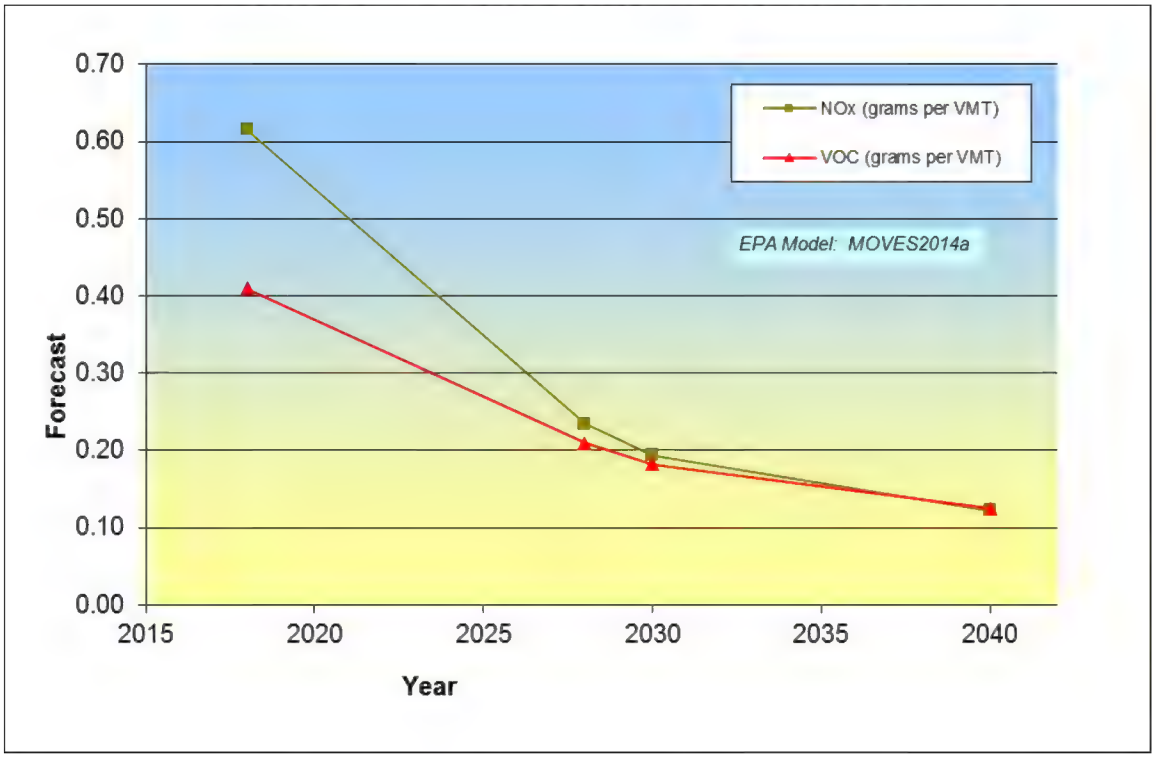


Exhibit 2-23(c): Regional Trends in Emissions per Vehicle

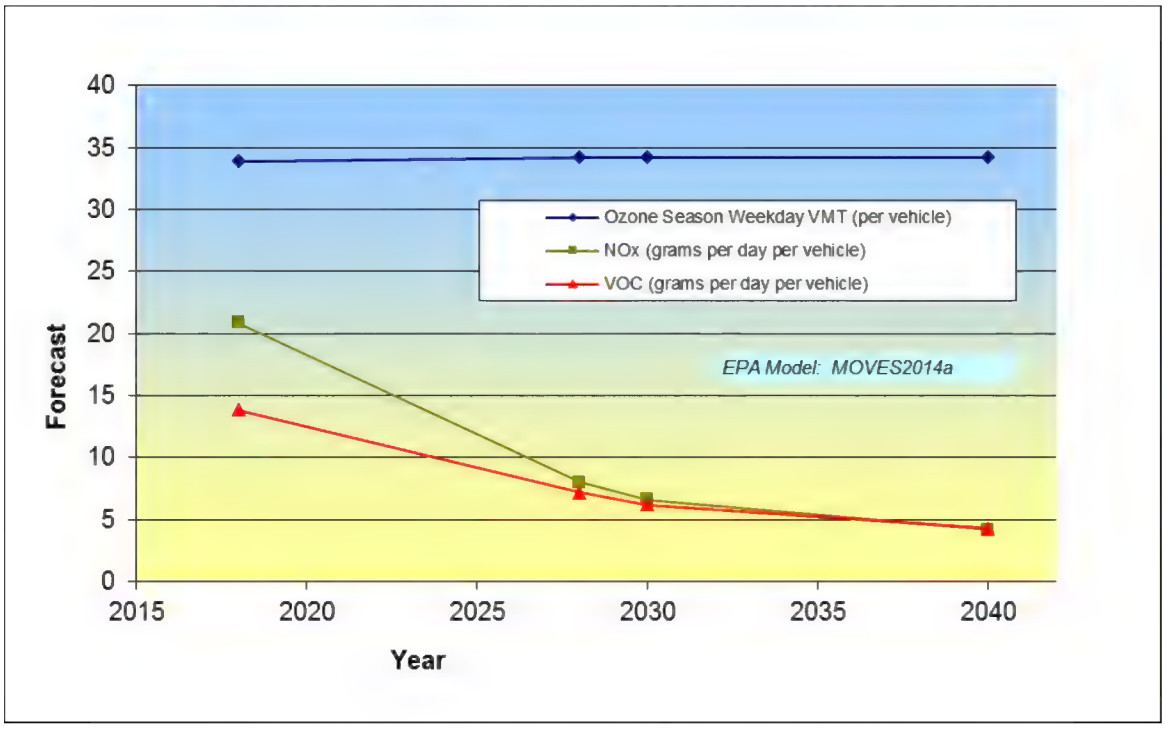


Exhibit 2-23(d): Regional Trends in Emissions per Capita

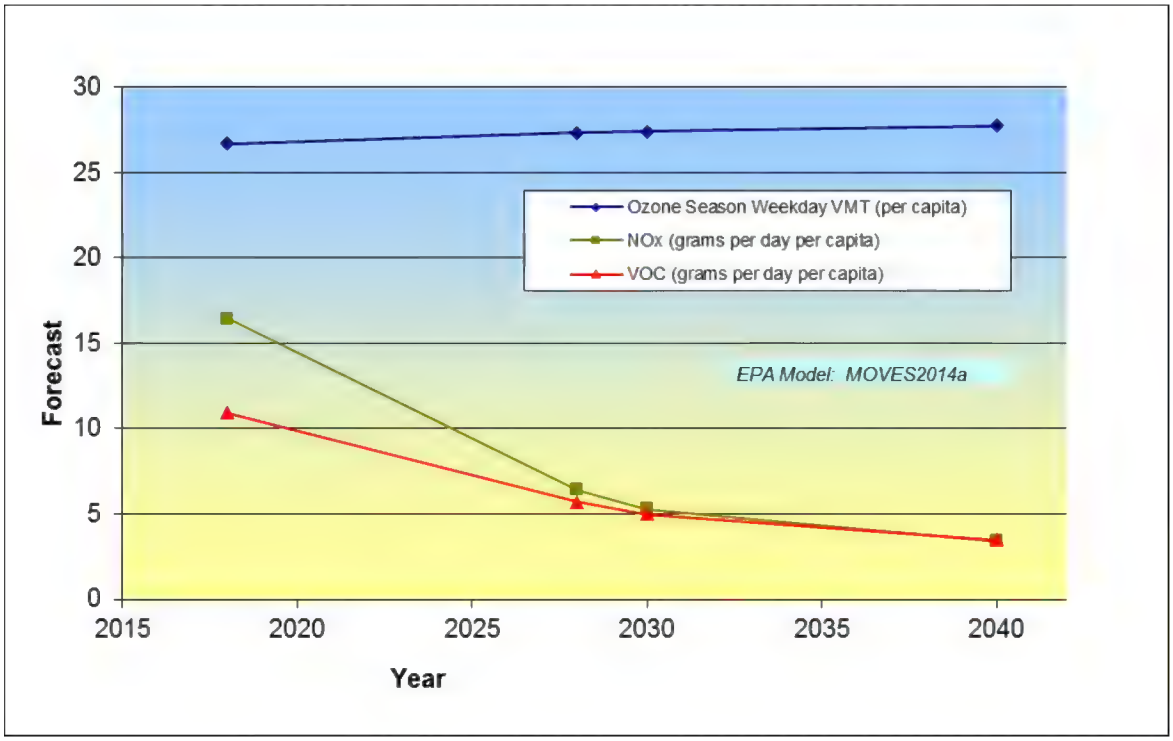


Exhibit 2-23(e): Regional Trends in Emissions per Household

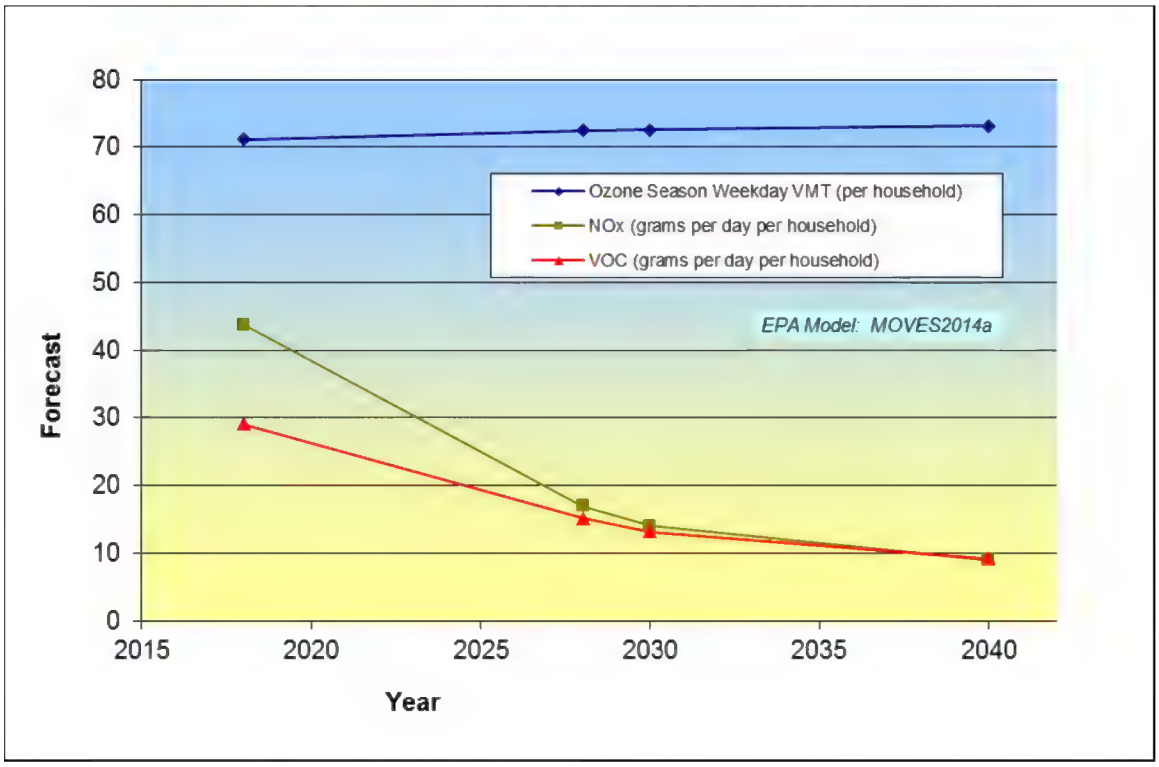
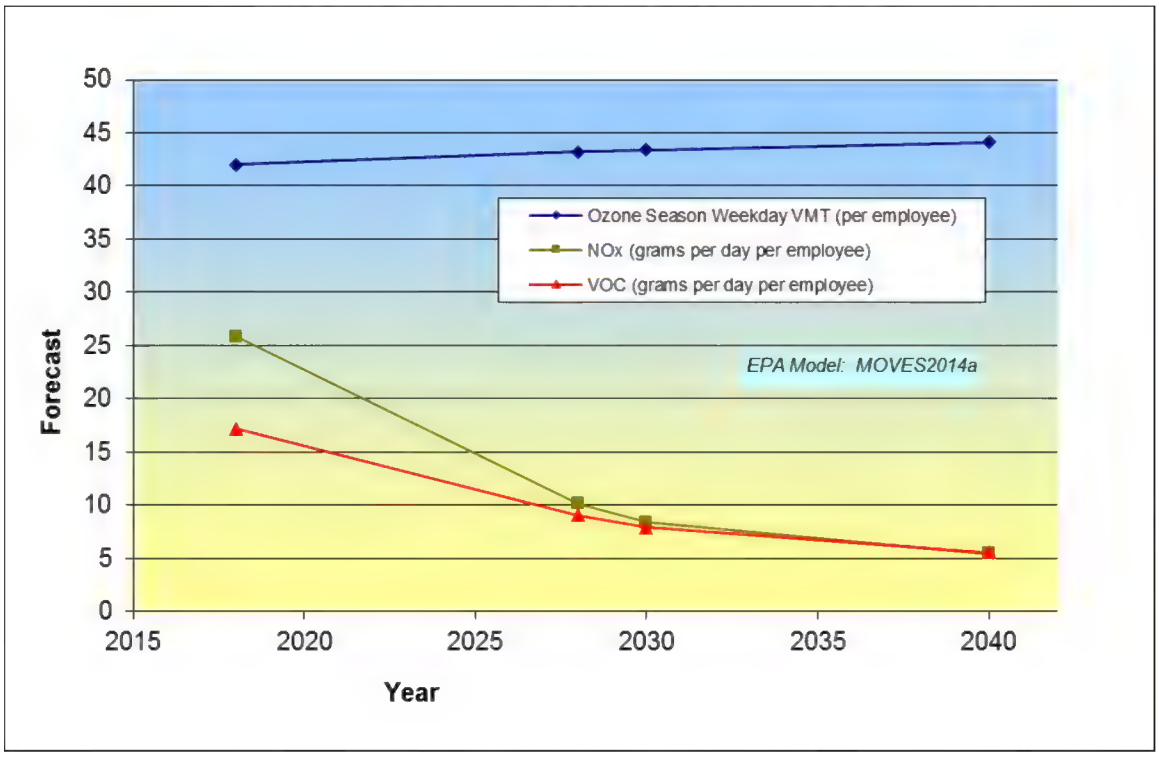


Exhibit 2-23(f): Regional Trends in Emissions per Employee



3. Consultation

Federal, state and local requirements for consultation are taken to apply for the development of transportation conformity analyses and determinations. This section documents both the applicable regulatory requirements and the consultation record for this analysis.

3.1 Regulatory Requirements

Regulatory requirements for consultation that were initially established at the federal level have been reflected in state regulations and requirements as well as locally-developed inter-agency and public consultation procedures. Exhibit 3-1 presents an overview of federal, state and local consultation requirements.

3.1.1 Federal Requirements

While the federal transportation conformity rule includes specific requirements for consultation in Section 93.105, those requirements were made subject in Section 93.112 of the same rule to the establishment and approval by EPA of corresponding state requirements, as follows:

> *"§93.112 Criteria and procedures: Consultation. Conformity must be determined according to the consultation procedures in this subpart and in the applicable implementation plan, and according to the public involvement procedures established in compliance with 23 CFR part 450. Until the implementation plan revision required by §51.390 of this chapter is fully approved by EPA, the conformity determination must be made according to §93.105 (a)(2) and (e) and the requirements of 23 CFR part 450."*[78]

The referenced section, 93.105(a)(2), requires consultation with local, state and federal agencies, as follows:

> *"[§93.105 (a)(2)]: Before EPA approves the conformity implementation plan revision required by §51.390 of this chapter, MPOs and State departments of transportation must provide reasonable opportunity for consultation with State air agencies, local air quality and transportation agencies, DOT, and EPA, including consultation on the issues described in paragraph (c)(1) of this section, before making conformity determinations."*

The referenced paragraphs [(c)(1)] state:

> *"(c) Interagency consultation procedures: Specific processes. Interagency consultation procedures shall also include the following specific processes: (1) A process involving the MPO, State and local air quality planning agencies, State and local transportation agencies, EPA, and DOT for the following:…"*

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[78] See Federal Conformity Rule, 40 CFR 93.112 *Criteria and Procedures: Consultation* http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.112.htm

Exhibit 3-1: Federal, State and Local Consultation Requirements Relating to Transportation Conformity

DATE	REQUIREMENT
PENDING	
Update to Inter-Agency Consultation Procedures for Transportation Conformity	Update for the existing (2005) Hampton Roads Conformity Consultation Procedures, both to better reflect the Virginia Conformity SIP *(Regulation for Transportation Conformity*, 9 VAC 5-151) and to streamline and update existing processes as appropriate.
CURRENTLY APPLICABLE OR APPROVED	
Federal	***Legislation & Regulations***
US EPA Regulation for Transportation Conformity (40 CFR Parts 51 and 93) *Key requirements for consultation are addressed in Sections 51.390, 93.105, and 93.112.*	
April 13, 2012	*Transportation Conformity Regulations as of April 2012* (EPA-420-B-12-013). This is the most current compilation by EPA of the Federal Transportation Conformity Rule (40 CFR Parts 51 and 93). It reflects all amendments made since the initial issuance by EPA of the rule in 1993. See: https://www.epa.gov/state-and-local-transportation/current-law-regulations-and-guidance-state-and-
US DOT Planning Assistance and Standards (23 CFR Part 450)(Transportation Planning & Programming Requirements) *Key requirements for consultation are addressed in Section 450.316 Interested parties, participation, and consultation.*	
June 27, 2016	US DOT - Federal Highway Administration, 23 CFR Parts 450 and 771, and Federal Transit Administration, 49 CFR Part 613, *Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning*; Final Rule. Final Rule effective June 27, 2016. See: https://www.gpo.gov/fdsys/pkg/FR-2016-05-27/html/2016-11964.htm. Most recent major update to the federal planning regulations.
	For reference, the FHWA also provides a compilation of transportation-related legislation, regulations and guidance on their website: https://www.fhwa.dot.gov/hep/guidance/index.cfm
Legislation - Federal Reauthorization, and the Clean Air Act as amended	
December 4, 2015	Federal Reauthorization - *Fixing America's Surface Transportation (FAST) Act* (Public Law No. 114-94). See: https://www.fhwa.dot.gov/fastact/legislation.cfm
November 15, 1990	Last set of major amendments to the *Clean Air Act*, although there have been minor amendments since. Conformity is addressed in Section 176(c).
State	***Federally-Required State Regulation for Transportation Conformity (9 VAC 5-151)***
-	Virginia *Regulation for Transportation Conformity* (9 VAC 5-151)*. See: https://law.lis.virginia.gov/admincode/title9/agency5/chapter151/
Local	***Consultation Procedures***
Public Participation Plan February 2018	MPO (HRTPO) approval of the *Hampton Roads Transportation Planning Organization Public Participation Plan*. This document responds to public and consultation stakeholder requirements specified in 23 CFR Part 450. See: https://www.hrtpo.org/page/public-participation-plan/
Inter-Agency Consultation Procedures for Transportation Conformity	
September 21, 2005	MPO (HRTPO) approval of (Inter-Agency) *Consultation Procedures for the Hampton Roads Ozone Nonattainment Area in Support of the Transportation Conformity Regulations (Revised July 18, 2005).* This revision updated the initial version approved in July 2001. These procedures were developed in response to requirements of the federal conformity rule at 40 CFR 93.105.

** On February 22, 2018, EPA published a final rule in the federal register, stating in part that "EPA is approving ... revisions updating the Virginia SIP to reflect the revocation of the 1997 ozone NAAQS in accordance with the requirements of the Clean Air Act (CAA)".*
See: https://www.gpo.gov/fdsys/pkg/FR-2018-02-22/pdf/2018-03524.pdf

The specific processes identified in the remainder of 93.105(c)(1) are lengthy but include, in general terms: the emission model(s) to be applied in regional (and project-level) conformity analyses as well as associated methods and assumptions, the identification of regionally significant projects, the treatment of exempt projects, TCMs, and other related items.

Federal Requirements for a State Regulation for Transportation Conformity

Section 51.390 of the federal transportation conformity rule effectively requires the development of a state regulation to govern conformity consultation processes and further provides that the state regulation once approved by EPA effectively governs (over the federal) where they overlap. Therefore, for example, the specific items listed in 93.105(c)(1) as referenced above are to be made enforceable in a corresponding state regulation.

Specifically, Section 51.390 provides in part that the federal requirements apply "until such time" as a requisite state regulation for transportation conformity is approved by EPA as part of a state implementation plan revision, as follows:

> *"§51.390 Implementation plan revision. (a) Purpose and applicability. The federal conformity rules under part 93, subpart A, of this chapter, in addition to any existing applicable state requirements, establish the conformity criteria and procedures necessary to meet the requirements of Clean Air Act section 176(c) until such time as EPA approves the conformity implementation plan revision required by this subpart…"*

The revision to the SIP for the transportation conformity regulation is also commonly referred to as the "Conformity SIP". Section 51.390 then requires that specific sections of the federal transportation conformity rule (including consultation requirements in Section 93.105)[79] must be addressed in a state conformity regulation, as follows:

> *"(b) Conformity implementation plan content. To satisfy the requirements of Clean Air Act section 176(c)(4)(E), the implementation plan revision required by this section must include the following three requirements of part 93, subpart A, of this chapter: §§93.105, 93.122(a)(4)(ii), and 93.125(c)..."*

Finally, Section 51.309 of the federal transportation conformity rule concludes that conformity determinations will be "governed" (where they overlap) by the federally-required state regulation or conformity SIP once it is approved, as follows:

> *"(c) Timing and approval... Following EPA approval of the state conformity provisions (or a portion thereof) in a revision to the state's conformity implementation plan, conformity determinations will be governed by the approved (or approved portion of the) state criteria and procedures as well as any applicable portions of the federal conformity rules that are not addressed by the approved conformity SIP."*

[79] Paragraphs 40 CFR 93.122(a)(4)(ii), and 93.125(c) respectively address commitments needed if any to emission reduction credits taken for control measures in the emissions analysis and any mitigation measures specified in the SIP.

3.1.2 Commonwealth of Virginia Requirements

As previously noted, the federal conformity rule at 40 CFR Part 51 effectively requires certain conformity requirements, primarily addressing consultation, be enacted in state regulation. Accordingly, the VDEQ in 1997 developed the Virginia *Regulation for Transportation Conformity* and have updated it on occasion since then. The current version is specified in the Virginia Administrative Code (VAC) at 9 VAC 5-151 (as previously referenced). The Virginia regulation closely reflects the requirements of the federal rule for inter-agency and public consultation, and was assumed in effect for this analysis[80].

General requirements for consultation are specified in Subsection 9 VAC 5-151-70 of the Virginia regulation. Subsection A[81] of this section requires that:

> *"The MPOs, LPOs, DEQ, VDOT and VDRPT shall undertake the procedures prescribed in this section for interagency consultation, conflict resolution and public consultation with each other and with local or regional offices of EPA, FHWA, and FTA on the development of control strategy implementation plan revisions, the list of TCMs in the applicable implementation plan, transportation plans, TIPs, and associated conformity determinations required by this chapter."*

Specific requirements in Virginia for inter-agency and public consultation are addressed in turn below.

3.1.2.1 Virginia Inter-Agency Consultation Requirements

Section 9 VAC 5-151-70 subsection C[82] of the Virginia regulation addresses inter-agency consultation. Subdivision C1 requires that:

> *C. The provisions of this subsection shall be followed with regard to general factors associated with interagency consultation.*
>
> *1. Representatives of the MPOs, VDOT, VDRPT, FHWA, and FTA shall undertake an interagency consultation process, in accordance with subdivisions 1 and 3 of this subsection and subsection D of this section, with the LPOs, DEQ and EPA on the development of implementation plans, transportation plans, TIPs, any revisions to the preceding documents, and associated conformity determinations."*

The referenced subsection D includes the following requirements under subdivision D1:

---

[80] On February 22, 2018, shortly after the previously referenced February 16, 2018 court decision was issued, an EPA final rule was published in the federal register, stating in part that "EPA is approving … revisions updating the Virginia SIP to reflect the revocation of the 1997 ozone NAAQS in accordance with the requirements of the Clean Air Act (CAA)". Given the court decision, this conformity analysis is proceeding as if the Virginia conformity SIP requirements apply for the 1997 ozone NAAQS. See: https://www.gpo.gov/fdsys/pkg/FR-2018-02-22/pdf/2018-03524.pdf

[81] Corresponding to 40 CFR 93.105(a) of the federal rule.

[82] Corresponding to 40 CFR 93.105(a)(2) of the federal rule. Subsection 9 VAC 5-151-70B, which also refers to inter-agency consultation, was applicable prior to the approval by EPA of the Virginia regulation. This subsection requires that: "*Until EPA grants approval of this chapter, the MPOs, and VDOT and VDRPT, prior to making conformity determinations, shall provide reasonable opportunity for consultation with LPOs, DEQ and EPA on the issues in subdivision D 1 of this section.*"

"D. The provisions of this subsection shall be followed with regard to specific processes associated with interagency consultation.

1. An interagency consultation process involving the MPOs, LPOs, DEQ, VDOT, VDRPT, EPA, FHWA, and FTA shall be undertaken for the following:
a. Evaluating and choosing each model (or models) and associated methods and assumptions to be used in hot-spot analyses and regional emission analyses, including vehicle miles traveled (VMT) forecasting, to be initiated by VDOT, in consultation with the MPOs, and conducted in accordance with subdivisions C 1 and 3 of this section.
b. Determining which transportation projects should be considered "regionally significant" for the purpose of regional emission analysis (in addition to those functionally classified as principal arterial or higher; or fixed guideway systems or extensions that offer an alternative to regional highway travel), and which projects should be considered to have a significant change in design concept and scope from the transportation plan or TIP, to be initiated by VDOT, in consultation with the MPOs, and conducted in accordance with subdivisions C 1 and 3 of this section.
c. Evaluating whether projects otherwise exempted from meeting the requirements of 40 CFR 93.126 and 40 CFR 93.127 should be treated as non-exempt in cases where potential adverse emissions impacts may exist for any reason, to be initiated by VDOT, in consultation with the MPOs, and conducted in accordance with subdivisions C 1 and 3 of this section.
d. Making a determination, as required by 40 CFR 93.113(c)(1), whether past obstacles to implementation of TCMs that are behind the schedule established in the applicable implementation plan have been identified and are being overcome, and whether state and local agencies with influence over approvals or funding for TCMs are giving maximum priority to approval or funding for TCMs, to be initiated by VDOT as lead agency, in consultation with the MPOs and VDRPT, and conducted in accordance with subdivisions C 1 and 3 of this section. This consultation process shall also consider whether delays in TCM implementation necessitate revisions to the applicable implementation plan to remove TCMs or substitute TCMs or other emission reduction measures.
e. Notifying all parties to the consultation process of transportation plan or TIP amendments which merely add or delete exempt projects listed in 40 CFR 93.126 or 40 CFR 93.127, to be initiated by VDOT in consultation with the MPOs, and conducted in accordance with subdivisions C 1 and 3 of this section.
f. Choosing conformity tests and methodologies for isolated rural nonattainment and maintenance areas, as required by 40 CFR 93.109(l)(2)(iii), to be initiated by VDOT, in consultation with the MPOs, and in accordance with subdivisions C 1 and 3 of this section.
g. Determining what forecast of vehicle miles traveled (VMT) to use in establishing or tracking emissions budgets, developing transportation plans, TIPs, of control strategy implementation plan revisions, or making conformity determinations, to be initiated by VDOT, in consultation with the MPOs, and in accordance with subdivisions C 1 and 3 of this section."

Other subdivisions of subsection D address respectively (paraphrasing) consultation requirements for events that trigger new conformity determinations and for emissions analyses for transportation activities that cross MPO borders or nonattainment areas (D2), for locations where the planning area does not include the entire nonattainment or

maintenance area (D3), for the disclosure of regionally significant projects that are not FHWA or FTA projects (D4), for assumptions for location, design concept and scope for projects identified in D4 but for which decisions have not yet been made on these elements (D5), and for the design, scheduling and funding of research and data collection and model development efforts for regional transportation (D6).

Subdivision C2 addresses consultation requirements for air agencies ("*LPOs, DEQ, and EPA*") in "*control strategy implementation plan revisions, the list of TCMs in the applicable implementation plan, and any revisions to the preceding documents.*" It does not address consultation requirements for conformity directly.

Subdivision C3 addresses the "*specific roles and responsibilities of various participants in the interagency consultation process.*" Note roles and responsibilities for transportation, air quality and related conformity planning activities for the Hampton Roads region specifically, in consideration of applicable federal and state requirements, are addressed in the *Metropolitan Planning Agreement for the Hampton Roads Area* that was executed on July 15, 2009 between VDOT, VDEQ, the HRTPO, the LPO and other parties.

3.1.2.2 Virginia Public Consultation Requirements

Section 9 VAC 5-151-70 subsection F[83] of the Virginia *Regulation for Transportation Conformity* includes the following requirements for public consultation:

> *"F. The provisions of this subsection shall be followed with regard to public consultation.*
>
> *1. The MPOs shall establish a proactive involvement process which provides reasonable opportunity for review and comment by, at a minimum, providing reasonable public access to technical and policy information considered by the MPO at the beginning of the public comment period and prior to taking formal action on a conformity determination for all transportation plans and TIPs, consistent with the requirements of 23 CFR 450.316(a).*
> *2. The MPOs shall specifically address in writing public comments regarding plans for a regionally significant project, not receiving FHWA or FTA funding or approval, and how the project is properly reflected in the emission analysis supporting a proposed conformity finding for a transportation plan or TIP.*
> *3. The MPOs shall also provide an opportunity for public involvement in conformity determinations for projects where otherwise required by law."*

The referenced requirements from the federal transportation planning rule at 23 CFR 450.316(a) are lengthy but include the following general introduction:

> "*§450.316 Interested parties, participation, and consultation. (a) The MPO shall develop and use a documented participation plan that defines a process for providing citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities,*

[83] Corresponding to 40 CFR 93.105(e) of the federal rule.

representatives of the disabled, and other interested parties with reasonable opportunities to be involved in the metropolitan transportation planning process…."

Additionally, for reference, requirements of the *Virginia Freedom of Information Act*[84] and the *Virginia Public Records Act*[85] also apply.

3.1.3 Local Requirements

In response to the applicable federal and Virginia conformity requirements summarized above, procedures have been established for Hampton Roads for both inter-agency and public consultation. These local procedures are reviewed in turn below.

3.1.3.1 Hampton Roads Inter-Agency Conformity Consultation Procedures

Inter-agency conformity consultation procedures were initially adopted by the MPO in 2001 and updated in 2005[86]. As these procedures reflect the federal regulations in force at the time of adoption, a review and update is being planned to reflect the specific language and requirements of the recently approved Virginia *Regulation for Transportation Conformity*.

In general, the Hampton Roads consultation procedures address the establishment and operation of an inter-agency consultation group (ICG). Membership in the ICG as specified in the Hampton Roads procedures includes representatives of each of the federal, state and local transportation and air agencies required by regulation. More specifically, ICG membership includes representatives of the HRTPO, HRTPO member agencies, VDOT, VDRPT, VDEQ, EPA, FHWA and FTA are represented at ICG meetings.

Although not specifically identified in the current (2005) ICG procedures, but consistent with the Virginia *Regulation for Transportation Conformity*, a representative of the designated Lead Planning Organization (LPO) for the region is also invited to participate in inter-agency consultation on conformity issues. The LPO for this area is the Hampton Roads Air Quality Committee (HRAQC).

In keeping with the applicable regulatory requirements and approved Hampton Roads conformity consultation procedures, ICG meetings are held to initiate conformity analyses for amendments, revisions and/or updates to the LRTP and/or TIP as appropriate, with consensus sought on the following topics:

- Latest emission model(s) selected for the conformity analysis, and associated methods and assumptions for the analysis,
- Regionally significant projects (list of LRTP and TIP project lists to be included in the network modeling for the conformity analysis), and

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[84] Virginia Freedom of Information Act: https://law.lis.virginia.gov/vacodepopularnames/virginia-freedom-of-information-act/

[85] Virginia Public Records Act: https://law.lis.virginia.gov/vacodepopularnames/virginia-public-records-act/

[86] VDOT, Consultation Procedures for the Hampton Roads Ozone Nonattainment Area in Support of the Transportation Conformity Regulations, Revised July 18, 2005. See: https://www.hrtpo.org/uploads/docs/Rev_HR_ICP2005.pdf

- Schedule for the conformity analysis.

Meeting notices and related correspondence are generally handled by email to ICG members with copies to all members of the Transportation Technical Advisory Committee (TTAC) as well as other interested parties[87]. Public notices (reviewed in the next section) are handled by the HRTPO and are typically posted on the Hampton Roads website and also provided to the media or designated outlets for media releases.

Inter-agency consultation also occurs through other HRTPO meetings including:
- Regularly scheduled HRTPO Board meetings,
- Regularly scheduled TTAC meetings, and
- Other meetings convened by the HRTPO, VDOT and/or VDEQ at which Hampton Roads issues relating to conformity may be one of several topics discussed.

3.1.3.2 Hampton Roads Public Participation Plan (PPP)

The current version of the HRTPO "*Public Participation Plan*" (PPP) was issued in 2018[88]. It specifies time periods for public review and comment as follows[89]: "

> *"The HRTPO provides a public review and comment period of no less than 30 days for full updates of the LRTP and TIP, the associated Regional Conformity Analyses (RCA) for Air Quality, (as necessary) and no less than 14 days for special studies and reports developed by the HRTPO staff. This is in addition to the participation outlined in the LRTP and TIP sections of this document. The HRTPO provides no less than 14 days for LRTP and TIP amendments ... For the Air Quality RCA, (if required) the HRTPO provides public access to technical and policy information associated with the conformity determination at the beginning of the process and during key analysis points."*

3.2 Consultation Record

This section documents the specific consultation activities conducted in support of the development of this conformity analysis. Included in this summary are both inter-agency and public consultation activities.

All consultation was conducted to satisfy the applicable requirements of both the federal regulation and the Virginia *Regulation for Transportation Conformity*. Additional specifics on the consultation conducted for this analysis are provided with the consultation record presented below and in Appendix D.

Interagency and public consultation opportunities relating to this conformity analysis, including the prior development of project lists, were (*or will be*) provided at the following meetings and events:
- June 6, 2018: The ICG meeting was held as part of the regularly-scheduled HRTPO Transportation Technical Advisory Committee (TTAC) meeting.

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87 Although not a requirement, many HRTPO member agencies are represented on the ICG by one of their TTAC representatives. ICG meetings are usually coordinated with TTAC meetings for convenience both in terms of meeting logistics and also for the TTAC to take action as needed (e.g. for any changes to the project lists), and to help ensure a quorum.

88 See: https://www.hrtpo.org/page/public-participation-plan/

89 Ibid, p.46

- The TTAC, acting on behalf of the HRTPO, approved the project list for the 2040 LRTP & 18-21 TIP and also the date for the August TTAC meeting at which the draft regional conformity analysis is scheduled to be presented. HRTPO and TTAC meetings are open to the public, with email announcements (including public notices) and agendas posted the week before the meeting. An opportunity for public input was provided at the beginning of the TTAC meeting; no comments from the public were received related to the ICG meeting.

- The ICG meeting marked the beginning of the conformity analysis process. This meeting provided an opportunity for detailed review and comment on all aspects of the proposed analysis, including models, associated methods and assumptions, the project list for the LRTP and TIP, and overall schedule, as well as an update to the ICG to formally include the HRAQC and the Hampton Roads District as members.

  Exhibit 3-2 lists the agencies represented in the Hampton Roads ICG. The membership includes all parties identified in the both the federal and state conformity regulations and is consistent with the requirements given in the 2005 Conformity Consultation Procedures for Hampton Roads.

  An advance notice of the ICG meeting notice was distributed by email. The presentation given at the ICG meeting included a review of the membership list (including the addition of the HRAQC, and designation of the VDEQ representative to serve as the HRAQC representative as needed), selection of the latest emission model for the analysis, modeling methodology and assumptions (including the selection of socioeconomic forecasts to meet latest planning assumption requirements), the project list to be applied in the conformity analysis for the Plan and TIP, and the conformity analysis schedule.

  Comments received from the ICG are documented in the minutes for the meeting, which are referenced below and copied in Appendix D. Based on a request, the VDOT Hampton Roads District was added as an ICG member (in addition to HRAQC).

  Copies of all materials distributed for the ICG Meeting are provided in Appendix D, with the exception of the project list for the Plan and TIP which is presented separately (for convenient reference) in Appendix E. Appendix D includes the meeting agenda, membership list, draft modeling methodology and assumptions (draft chapter of conformity analysis report), draft conformity analysis schedule, presentation (PowerPoint slides), and email/website notices.

- *August 1, 2018: TTAC approval (on behalf of the HRTPO) of the draft Conformity Analysis and proposed finding of conformity for the 2040 LRTP and FY 2018-2021 TIP, subject to no adverse comments received during the associated public review period that would require their review.*

  Prior to the August TTAC meeting to present the draft conformity analysis, draft meeting minutes (including attachments and an updated ICG Membership list) were distributed for comment as part of the TTAC agenda.

Exhibit 3-2: Hampton Roads Interagency Consultation Group (ICG)

Agency	*Member*	*Alternate*
City/County		
City of Chesapeake	Earl Sorey	Steve Froncillo
City of Hampton	John Yorks	Michael Hayes
City of Newport News	Jacqueline Kassel	Bridjette Parker
City of Norfolk	Jeffrey Raliski	
City of Poquoson	Dannan O'Connell	Deborah Vest
City of Portsmouth	James Wright	
City of Suffolk	Robert Lewis	Sherry Earley
City of Virginia Beach	Brian Solis	Tara Reel
City of Williamsburg	Carolyn Murphy	Aaron Small
Gloucester County	Carol Rizzio	Anne Ducey-Ortiz
Isle of Wight County	Richard Rudnicki	
James City County	Paul Holt	Tammy Rosario
York County	Timothy Cross	
Regional		
Hampton Roads Transportation Planning Organization	Dale Stith	Theresa Brooks
Hampton Roads Transit	Jamie Jackson	Keisha Branch
Williamsburg Area Transit Authority	Josh Moore	Barbara Creel
Hampton Roads Air Quality Committee (HRAQC)	*VDEQ Proxy**	
State		
Virginia Dept. of Environmental Quality*	Sonya Lewis-Cheatham	
Virginia Dept. of Rail & Public Transportation	Jennifer DeBruhl	Chris Arabia
Virginia Dept. of Transportation – C/O Environmental	Jim Ponticello	Christopher Voigt
Virginia Dept. of Transportation – C/O Planning	Peng Xiao	
Virginia Dept. of Transportation – HR District Planning	Eric Stringfield	Ray Hunt
Federal		
Environmental Protection Agency	Gregory Becoat	
Federal Highway Administration	Ivan Rucker	
Federal Transit Administration	Melissa McGill	
Non-Voting		
US Navy	Rhonda Murray	

** The VDEQ representative also serves as the HRAQC/LPO representative as needed.*

- *August 1-15, 2018: Fourteen-day public review period on the draft Regional Conformity Analysis and proposed finding of conformity. A public notice with links to copies of the draft Conformity Analysis and its Executive Summary were posted on the HRTPO website.*

- *August 29, 2018: HRTPO approval of the draft Conformity Analysis and finding of conformity.*

4. Conformity Demonstration & Conclusion

As summarized in Exhibit 4-1, the Plan and Program meet all applicable federal and state conformity requirements and criteria[90]. The conformity analysis was conducted in compliance with the federal transportation conformity rule (40 CFR Parts 51 and 93) and the corresponding state conformity regulation (9 VAC 5-151).

Exhibit 4-1: Conformity Analysis Summary*

Section	Criteria	Demonstrated:
93.108	Fiscal constraint	Yes**
93.110	Latest planning assumptions	Yes
93.111	Latest emissions model	Yes
93.112	Consultation	Yes***
93.113(b) & (c)	TCMs	na****
93.118	Emissions Budget	Yes

* *As specified in 40 CFR 93.109, "Table 1 – Conformity Criteria", with the addition of fiscal constraint as required in Section 93.108. Additional requirements apply, e.g. as specified in 93.122, although not specifically listed above.*

** *As indicated by MPO (HRTPO) approval and/or provision of the project lists for the Plan and Program and the supporting information provided with those documents, and subject to federal review consistent with 23 CFR Part 450 as referenced in the conformity rule in Section 93.108.*

*** *Conducted to meet both state and federal requirements.*

**** *The maintenance plan for Hampton Roads (72 FR 30490, effective June 1, 2007) does not include transportation control measures (TCMs), which therefore are not required for the conformity analysis or determination.*

A recommendation for a finding of conformity is therefore made, conditional upon any further and separate review as may be required by the US Department of Transportation (US DOT) for the fiscal constraint criterion consistent with Section 93.108[91] of the federal conformity rule and the requirements of the federal planning rule specified at 23 CFR Part 450[92].

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[90] Federal Conformity Rule, 40 CFR 93.109 (*Criteria…*). See "*Table 1 - Conformity Criteria*": http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.109.htm

[91] Federal Conformity Rule, 40 CFR 93.108 Fiscal Constraints for Transportation Plans and TIPs: http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.108.htm

[92] US DOT - Federal Highway Administration (FHWA), 23 CFR Parts 450 and 500 and Federal Transit Administration (FTA), 49 CFR Part 613, *Statewide Transportation Planning; Metropolitan Transportation Planning,* Final Rule effective March 16, 2007. See: http://edocket.access.gpo.gov/2017/07-493.htm.

For reference, the FHWA also provides a compilation of transportation-related legislation, regulations and guidance on their website: https://www.fhwa.dot.gov/hep/guidance/index.cfm.

APPENDICES

Appendix A: Socioeconomic Forecasts by Jurisdiction

2018	Population	Households	Autos	Total Employment
Chesapeake	247,435	88,956	207,343	138,168
Gloucester County	37,672	14,729	42,628	16,196
Hampton	142,554	54,850	109,905	84,177
Isle of Wight	43,071	17,001	50,066	21,270
James City County	75,451	30,255	68,242	44,798
Newport News	184,479	73,313	137,990	122,506
Norfolk	242,154	87,039	153,788	228,850
Poquoson	12,032	4,477	12,985	2,833
Portsmouth	98,166	38,768	71,807	61,535
Suffolk	111,946	41,119	95,676	43,038
Virginia Beach	452,727	169,897	342,511	275,057
Williamsburg	14,622	4,690	10,450	25,978
York County	70,857	25,007	61,938	37,185
TOTAL	**1,733,166**	**650,101**	**1,365,329**	**1,101,591**

2028	Population	Households	Autos	Total Employment
Chesapeake	277,958	100,473	227,912	151,278
Gloucester County	38,822	15,169	41,163	17,103
Hampton	140,118	55,147	112,177	86,505
Isle of Wight	52,039	20,496	54,809	25,692
James City County	88,517	35,733	77,036	50,933
Newport News	186,582	73,940	145,543	125,780
Norfolk	247,166	89,069	169,991	231,267
Poquoson	12,199	4,578	12,447	3,188
Portsmouth	98,186	38,732	75,577	65,569
Suffolk	144,107	53,240	119,052	52,063
Virginia Beach	473,080	178,675	364,819	291,723
Williamsburg	15,792	5,284	13,475	27,354
York County	76,240	27,549	64,786	41,781
TOTAL	**1,850,806**	**698,085**	**1,478,787**	**1,170,236**

2030	Population	Households	Autos	Total Employment
Chesapeake	284,070	102,777	232,025	153,899
Gloucester County	39,051	15,260	40,866	17,288
Hampton	139,632	55,208	112,626	86,973
Isle of Wight	53,836	21,200	55,758	26,577
James City County	91,133	36,828	78,798	52,165
Newport News	186,999	74,062	147,052	126,430
Norfolk	248,183	89,469	173,239	231,776
Poquoson	12,234	4,599	12,338	3,256
Portsmouth	98,186	38,734	76,330	66,369
Suffolk	150,538	55,668	123,735	53,877
Virginia Beach	477,141	180,426	369,289	295,043
Williamsburg	16,028	5,406	14,076	27,627
York County	77,316	28,057	65,356	42,697
TOTAL	**1,874,347**	**707,694**	**1,501,488**	**1,183,977**

2040	Population	Households	Autos	Total Employment
Chesapeake	314,600	114,300	252,600	167,000
Gloucester County	40,200	15,700	39,400	18,200
Hampton	137,200	55,500	114,900	89,300
Isle of Wight	62,800	24,700	60,500	31,000
James City County	104,200	42,300	87,600	58,300
Newport News	189,100	74,700	154,600	129,700
Norfolk	253,200	91,500	189,400	234,200
Poquoson	12,400	4,700	11,800	3,600
Portsmouth	98,200	38,700	80,100	70,400
Suffolk	182,700	67,800	147,100	62,900
Virginia Beach	497,500	189,200	391,600	311,700
Williamsburg	17,200	6,000	17,100	29,000
York County	82,700	30,600	68,200	47,300
TOTAL	**1,992,000**	**755,700**	**1,614,900**	**1,252,600**

Source: HRTPO Transmittal May 2018

Appendix B: Traffic Forecast HPMS Adjustment Factor

HPMS/TDM VMT Ratio:

MOVES Roadway Type	Modeled VMT	HPMS	HPMS/Modeled
2. Rural Restricted Access	6,625,265	840,568	0.1269
3. Rural Unrestricted Access	9,854,792	1,293,614	0.1313
4. Urban Restricted Access	9,141,753	13,346,320	1.4599
5. Urban Unrestricted Access	12,514,683	18,698,681	1.4941
Totals	**38,136,492**	**34,179,182**	**0.8962**

Hampton Roads Annual Average Weekday / Annual Average Daily VMT Ratio, Based on 2009 HPMS Data

(Excerpt for select high volume links for Virginia Beach, with totals for all links, all jurisdictions)

Juris	Link ID	AADT	AAWDT	Link Length	AADVMT	AAWDVMT
VB	050199	92,000	98,000	1.4000	128,800	137,200
VB	050200	95,000	102,000	1.6300	154,850	166,260
VB	050201	76,000	82,000	2.3400	177,840	191,880
VB	050202	72,000	77,000	2.7400	197,280	210,980
VB	050203	91,000	97,000	1.2800	116,480	124,160
VB	050204	92,000	99,000	1.2100	111,320	119,790
VB	677731	77,000	84,000	0.8000	61,600	67,200
VB	677845	77,000	84,000	0.7900	60,830	66,360
VB	677847	76,000	83,000	0.1000	7,600	8,300
VB	950169	74,000	80,000	1.3500	99,900	108,000
TOTAL (All LINKS, ALL JURISDICTIONS)					33,775,367	35,487,544
WEIGHTED AVERAGE (TOTAL AAWD/TOTAL AAD VMT)						**1.0507**

HRTPO Model Adjustment Factor for 2009

2009 HPMS/HRTPO TDM VMT (A)	2009 AAWDT/AADT Ratio, VMT-Weighted (B)	HRTPO Model Adjustment Factor (AxB)
0.8962	1.0507	0.9417

Appendix C: MOVES2014a Run Specification File

Separate run specification files are used for each jurisdiction and modeling year. A sample file for 2040 for Virginia Beach is presented below. Copies of complete input files are available upon request.

SAMPLE RUN-SPECIFICATION FILE: Virginia Beach, 2040

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Modeling Year: 2040
Jurisdiction:      51810 VB

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- July /Ozone Season Weekday
- Traffic:  HRTPO TDM w VDOT PP v3
- Fuel:     MOVES2014a  Defaults
- Other:   VDEQ NEI2 (EPA-CRC inputs in part)]]></description>
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Appendix D: Consultation

This appendix includes Inter-Agency Consultation Group (ICG) and public consultation materials for the conformity analysis. Attached in reverse chronological order are:

- Letter dated August 29, 2018 from the HRTPO documenting MPO approval of the draft conformity analysis
- HRTPO Website Listing for the TPO 8/29/2018 meeting
- TPO 8/21/2018 Email (documenting no comments received in public review period)
- Public notice for the draft conformity analysis (fourteen-day public review)(as posted on the HRTPO website)
- August 1, 2018 TTAC Meeting
    - Presentation of draft conformity analysis
    - Email notice & website screenshots
- June 6, 2018 TTAC / ICG Meeting
    - Final Minutes (from July TTAC Agenda)
    - Item 8 - TTAC Approval of Project List (Agenda Item Only) & Selection of Aug. 1 v. 8 for TTAC Meeting at which the draft conformity analysis would be presented for approval
    - Item 9:
        - ICG Presentation (PowerPoint slides)
        - TTAC Agenda Text
        - Attachment 9A – Draft ICG Membership
        - Attachment 9B – Draft Schedule
        - Enclosure 9A – Draft Methodology
        - Enclosure 9B – Draft TIP & LRTP Project List (*Regionally Significant* and *Not Regionally Significant* in separate sections)(INCLUDED SEPARATELY AS APPENDIX E TO THIS DOCUMENT)
    - HRTPO Website Listing for the TTAC & ICG Meetings
    - Advance Notices for the ICG Meeting (Email)

the heartbeat of HAMPTON ROADS TPO
TRANSPORTATION PLANNING ORGANIZATION

THOMAS G. SHEPPERD, JR., CHAIR, JOHN L. ROWE, VICE CHAIR
ROBERT A. CRUM JR., EXECUTIVE DIRECTOR

August 29, 2018

Mr. Christopher G. Hall, P.E.
Hampton Roads District Engineer
Virginia Department of Transportation
7511 Burbage Drive
Suffolk, VA 23435

Re: HRTPO Action (2040 LRTP and FY 18-21 TIP Conformity)

Dear Mr. Hall:

This is to certify that the Hampton Roads Transportation Planning Organization (HRTPO) Board, at its meeting on August 29, 2018, approved the *Hampton Roads, Virginia Eight-Hour Ozone Maintenance Area – Regional Conformity Analysis: 2040 Long-Range Transportation Plan (LRTP) and the FY 18-21 Transportation Improvement Program (TIP).*

The 2040 LRTP was adopted by the HRTPO Board on July 21, 2016; on June 6, 2018, the Transportation Technical Advisory Committee (per an Authorizing Resolution from the HRTPO Board) approved the list of regionally-significant projects for the 2040 LRTP and FY 2018-2021 TIP for transportation conformity analysis. The analysis determined that all applicable regulatory requirements and criteria are satisfied and a finding of conformity for the 2040 LRTP and FY 2018-2021 TIP, as amended, is therefore proposed. The draft transportation conformity analysis of the 2040 LRTP and FY 2018-2021 TIP was made available for public review from August 1, 2018 through August 16, 2018 and no comments were received.

The *Hampton Roads, Virginia Eight-Hour Ozone Maintenance Area – Regional Conformity Analysis: 2040 Long-Range Transportation Plan and the FY 18-21 Transportation Improvement Program* final report is available for viewing and printing through the HRTPO website at www.hrtpo.org.

Please advise me of any additional information you may need in regard to the foregoing.

Sincerely,

Robert A. Crum Jr.
Executive Director

DMS/sc

Copy: Jim Ponticello, VDOT
Christopher Voigt, VDOT

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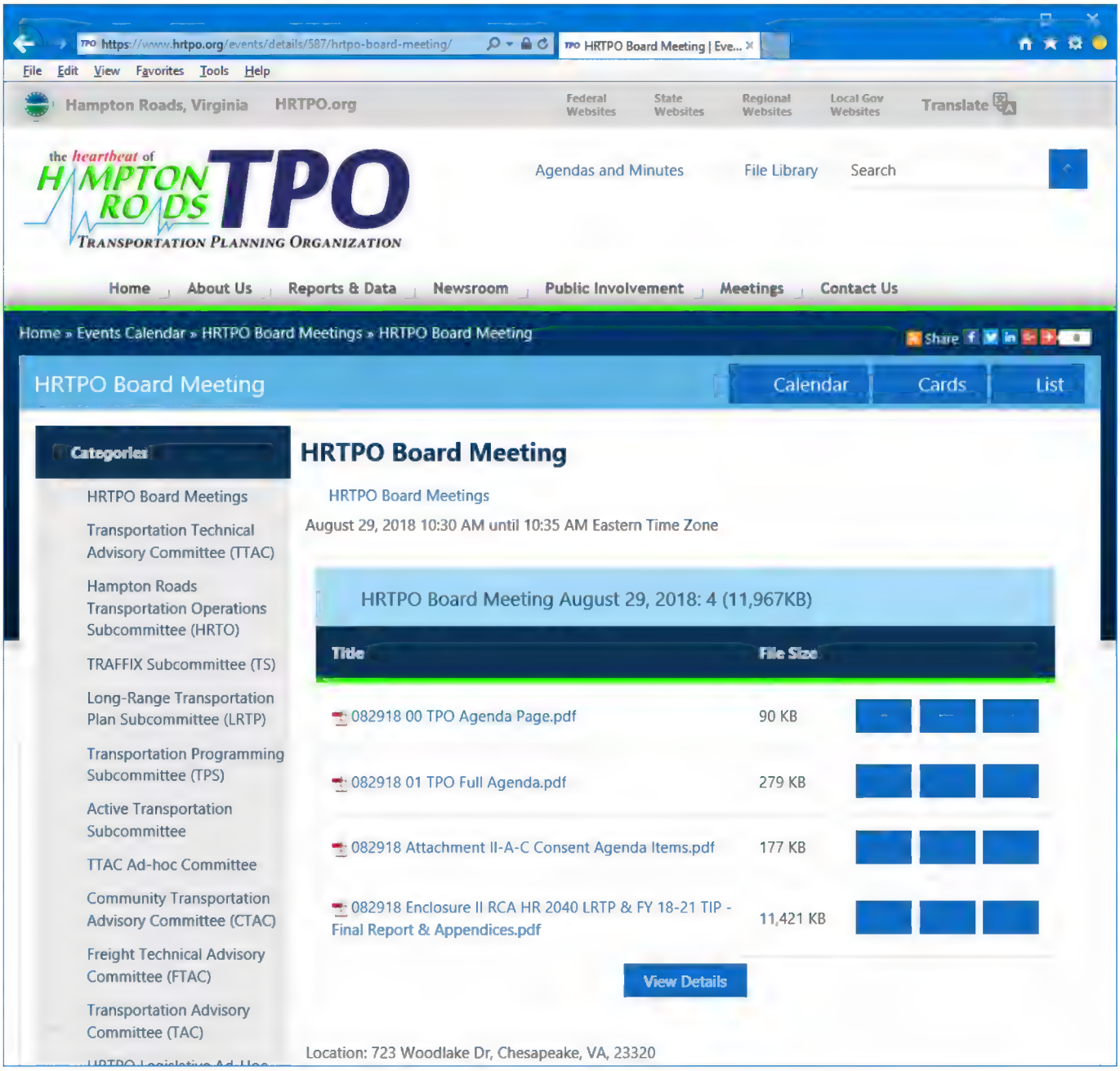
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TTAC Ad-hoc Committee
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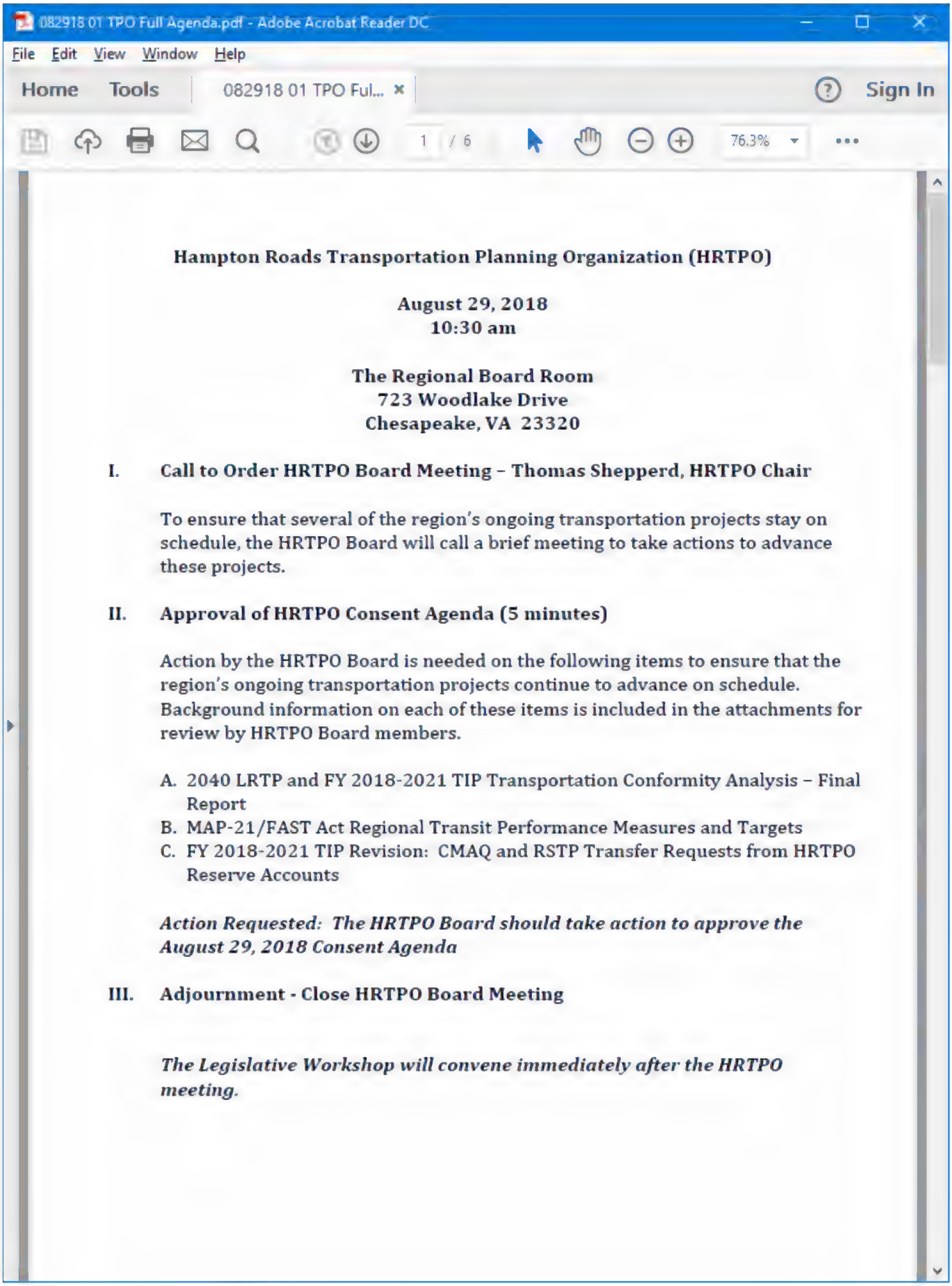
082918 01 TPO Full Agenda.pdf
279 KB
082918 Attachment II-A-C Consent Agenda Items.pdf
177 KB
082918 Enclosure II RCA HR 2040 LRTP & FY 18-21 TIP - Final Report & Appendices.pdf
11,421 KB
View Details
Location: 723 Woodlake Dr, Chesapeake, VA, 23320



Hampton Roads Transportation Planning Organization (HRTPO)

August 29, 2018
10:30 am

The Regional Board Room
723 Woodlake Drive
Chesapeake, VA 23320

I. Call to Order HRTPO Board Meeting – Thomas Shepperd, HRTPO Chair

To ensure that several of the region's ongoing transportation projects stay on schedule, the HRTPO Board will call a brief meeting to take actions to advance these projects.

II. Approval of HRTPO Consent Agenda (5 minutes)

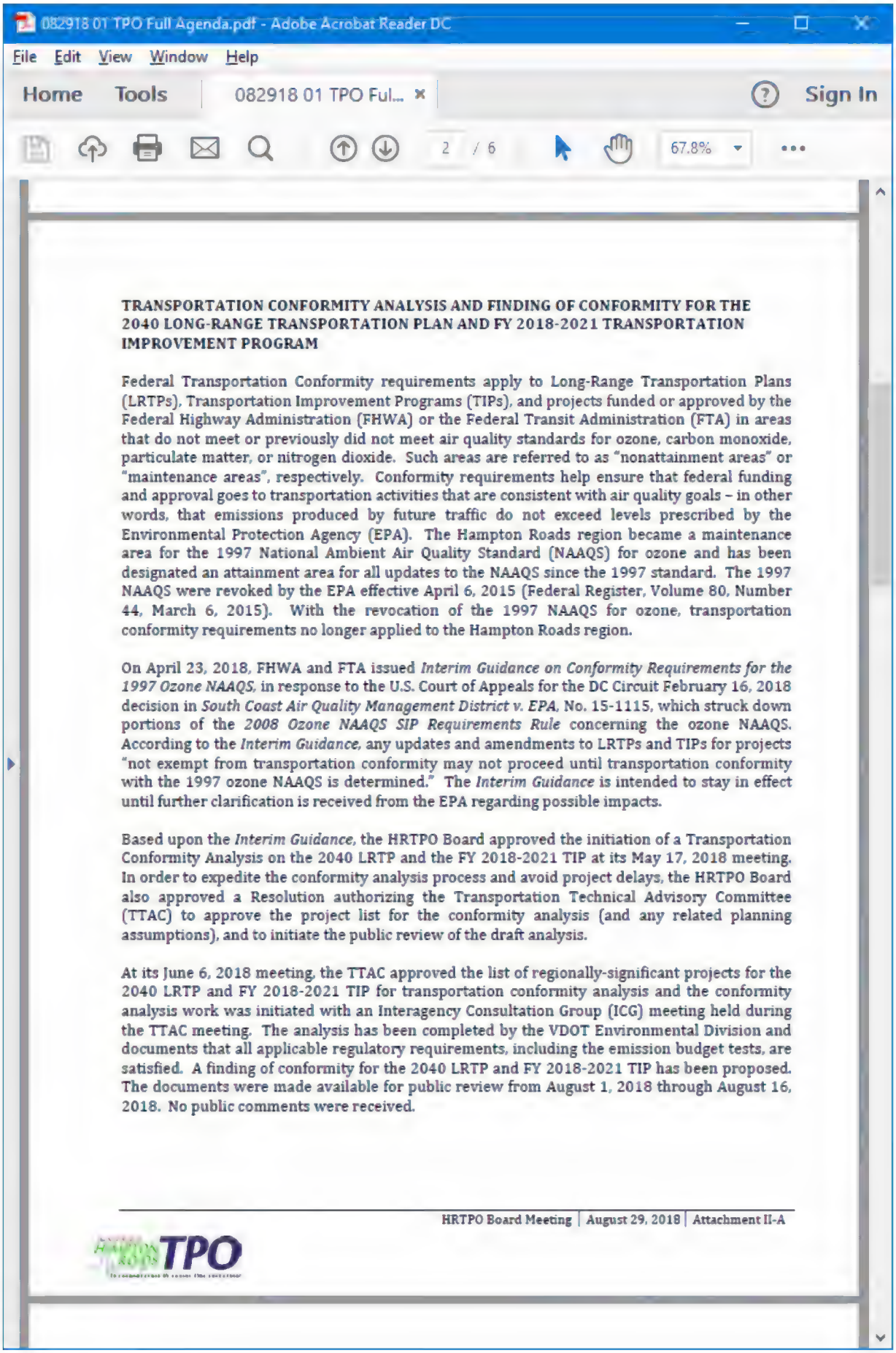
Action by the HRTPO Board is needed on the following items to ensure that the region's ongoing transportation projects continue to advance on schedule. Background information on each of these items is included in the attachments for review by HRTPO Board members.

A. 2040 LRTP and FY 2018-2021 TIP Transportation Conformity Analysis – Final Report
B. MAP-21/FAST Act Regional Transit Performance Measures and Targets
C. FY 2018-2021 TIP Revision: CMAQ and RSTP Transfer Requests from HRTPO Reserve Accounts

Action Requested: The HRTPO Board should take action to approve the August 29, 2018 Consent Agenda

III. Adjournment - Close HRTPO Board Meeting

The Legislative Workshop will convene immediately after the HRTPO meeting.



TRANSPORTATION CONFORMITY ANALYSIS AND FINDING OF CONFORMITY FOR THE 2040 LONG-RANGE TRANSPORTATION PLAN AND FY 2018-2021 TRANSPORTATION IMPROVEMENT PROGRAM

Federal Transportation Conformity requirements apply to Long-Range Transportation Plans (LRTPs), Transportation Improvement Programs (TIPs), and projects funded or approved by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA) in areas that do not meet or previously did not meet air quality standards for ozone, carbon monoxide, particulate matter, or nitrogen dioxide. Such areas are referred to as "nonattainment areas" or "maintenance areas", respectively. Conformity requirements help ensure that federal funding and approval goes to transportation activities that are consistent with air quality goals – in other words, that emissions produced by future traffic do not exceed levels prescribed by the Environmental Protection Agency (EPA). The Hampton Roads region became a maintenance area for the 1997 National Ambient Air Quality Standard (NAAQS) for ozone and has been designated an attainment area for all updates to the NAAQS since the 1997 standard. The 1997 NAAQS were revoked by the EPA effective April 6, 2015 (Federal Register, Volume 80, Number 44, March 6, 2015). With the revocation of the 1997 NAAQS for ozone, transportation conformity requirements no longer applied to the Hampton Roads region.

On April 23, 2018, FHWA and FTA issued *Interim Guidance on Conformity Requirements for the 1997 Ozone NAAQS*, in response to the U.S. Court of Appeals for the DC Circuit February 16, 2018 decision in *South Coast Air Quality Management District v. EPA*, No. 15-1115, which struck down portions of the *2008 Ozone NAAQS SIP Requirements Rule* concerning the ozone NAAQS. According to the *Interim Guidance*, any updates and amendments to LRTPs and TIPs for projects "not exempt from transportation conformity may not proceed until transportation conformity with the 1997 ozone NAAQS is determined." The *Interim Guidance* is intended to stay in effect until further clarification is received from the EPA regarding possible impacts.

Based upon the *Interim Guidance*, the HRTPO Board approved the initiation of a Transportation Conformity Analysis on the 2040 LRTP and the FY 2018-2021 TIP at its May 17, 2018 meeting. In order to expedite the conformity analysis process and avoid project delays, the HRTPO Board also approved a Resolution authorizing the Transportation Technical Advisory Committee (TTAC) to approve the project list for the conformity analysis (and any related planning assumptions), and to initiate the public review of the draft analysis.

At its June 6, 2018 meeting, the TTAC approved the list of regionally-significant projects for the 2040 LRTP and FY 2018-2021 TIP for transportation conformity analysis and the conformity analysis work was initiated with an Interagency Consultation Group (ICG) meeting held during the TTAC meeting. The analysis has been completed by the VDOT Environmental Division and documents that all applicable regulatory requirements, including the emission budget tests, are satisfied. A finding of conformity for the 2040 LRTP and FY 2018-2021 TIP has been proposed. The documents were made available for public review from August 1, 2018 through August 16, 2018. No public comments were received.

Upon HRTPO Board approval, VDOT will transmit the final air quality conformity analysis to the FHWA to initiate the 45-day federal review and approval process. It is anticipated that the FHWA and FTA, in consultation with the EPA, will provide their finding of conformity by mid-October 2018.

The TTAC has recommended HRTPO Board approval of the transportation conformity analysis and finding of conformity for the 2040 LRTP and FY 2018-2021 TIP. The HRTPO Board Action Letter documenting approval of this item will be included in the appendix of the report before distribution.

Enclosure: Hampton Roads, Virginia Eight-Hour Ozone Maintenance Area – Regional Conformity Analysis: 2040 Long-Range Transportation Plan and FY 18-21 Transportation Improvement Program Report

RECOMMENDED ACTION:

Approve the transportation conformity analysis and finding of conformity for the 2040 LRTP and FY 2018-2021 TIP.

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Hampton Roads, Virginia Eight-Hour Ozone Maintenance Area

Regional Conformity Analysis

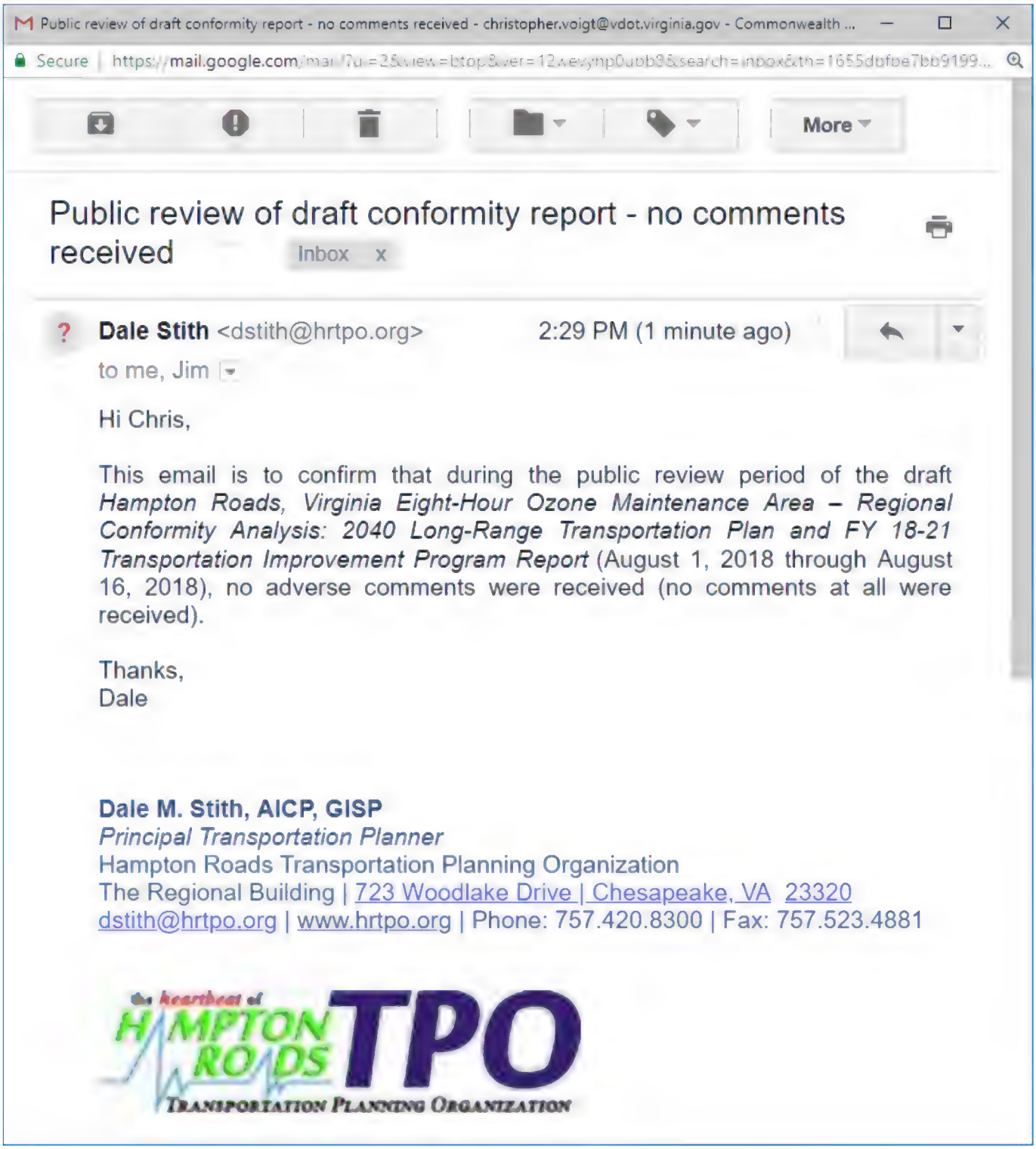
2040 Long Range Transportation Plan and FY 18-21 Transportation Improvement Program

FINAL REPORT

Prepared by: Virginia Department of Transportation

August 2018

Virginia Department of Transportation VDOT



Public review of draft conformity report - no comments received - christopher.voigt@vdot.virginia.gov - Commonwealth ...

Secure | https://mail.google.com/...

More

Public review of draft conformity report - no comments received

Inbox x

Dale Stith <dstith@hrtpo.org> 2:29 PM (1 minute ago)

to me, Jim

Hi Chris,

This email is to confirm that during the public review period of the draft *Hampton Roads, Virginia Eight-Hour Ozone Maintenance Area – Regional Conformity Analysis: 2040 Long-Range Transportation Plan and FY 18-21 Transportation Improvement Program Report* (August 1, 2018 through August 16, 2018), no adverse comments were received (no comments at all were received).

Thanks,
Dale

Dale M. Stith, AICP, GISP
Principal Transportation Planner
Hampton Roads Transportation Planning Organization
The Regional Building | 723 Woodlake Drive | Chesapeake, VA 23320
dstith@hrtpo.org | www.hrtpo.org | Phone: 757.420.8300 | Fax: 757.523.4881

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Public Notice
Draft Transportation Conformity Analysis For The Hampton Roads, Virginia Eight-Hour Ozone Maintenance Area
The Hampton Roads Transportation Planning Organization (HRTPO) requests pubic review and comment on the Draft Hampton Roads, Virginia Eight-Hour Ozone Maintenance Area – Regional Conformity Analysis. The transportation conformity analysis was performed to ensure that the Hampton Roads 2040 Long-Range Transportation Plan and the Hampton Roads FY 2018-2021 Transportation Improvement Program are in compliance with federal air quality regulations. The report can be viewed via the link below.
Hampton Roads Regional Conformity Analysis – 2040 LRTP and FY 2018-2021 TIP
All interested parties are encouraged to review the document and send comments to Dale Stith, Principal Transportation Planner, at dstith@hrtpo.org or by mail to 723 Woodlake by August 16, 2018.
McAfee SECURE

VDOT
Virginia Department of Transportation

HAMPTON ROADS REGIONAL CONFORMITY ANALYSIS
2040 LONG RANGE TRANSPORTATION PLAN &
FY 18-21 TRANSPORTATION IMPROVEMENT PROGRAM

Hampton Roads TTAC

August 1, 2018 – 9:30 a.m.

HRTPO Regional Boardroom

Christopher Voigt, VDOT Air Quality

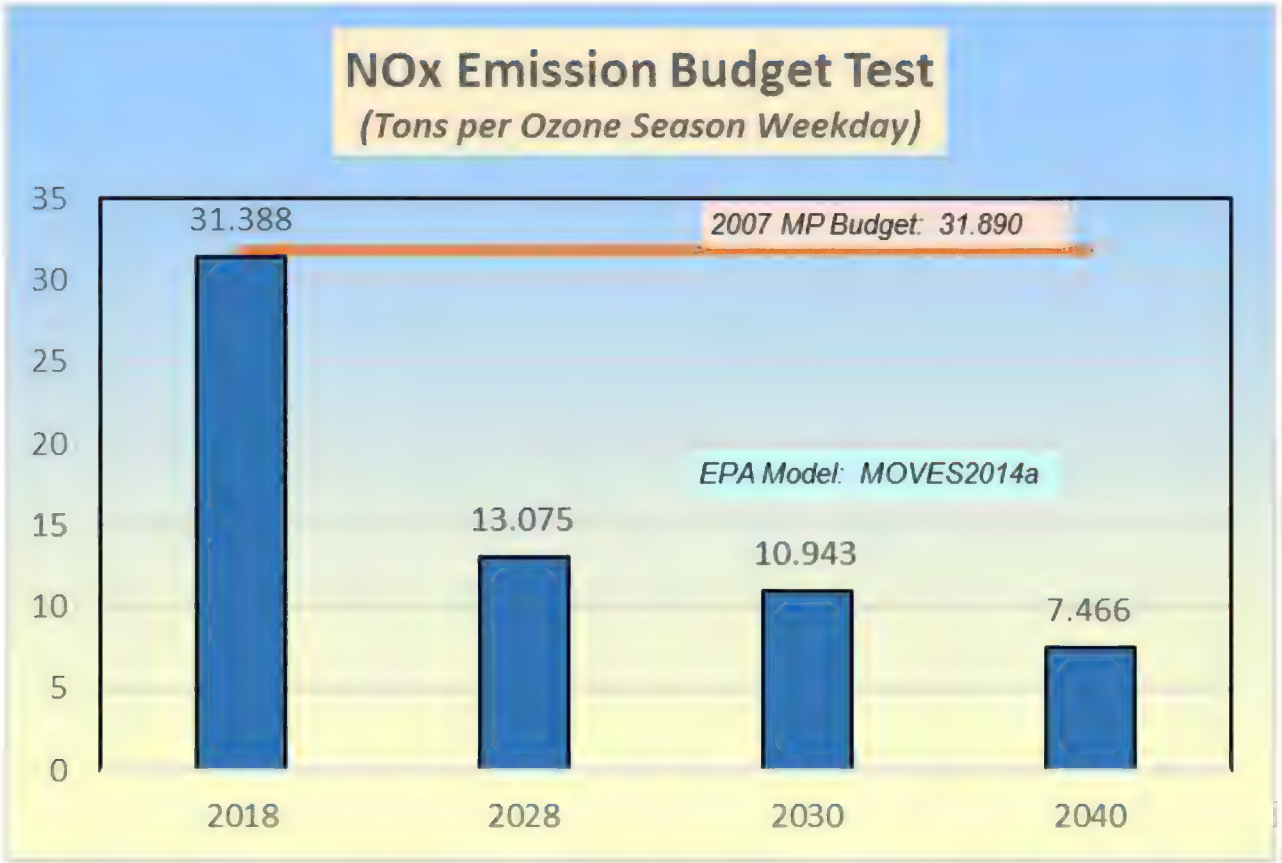
Agenda

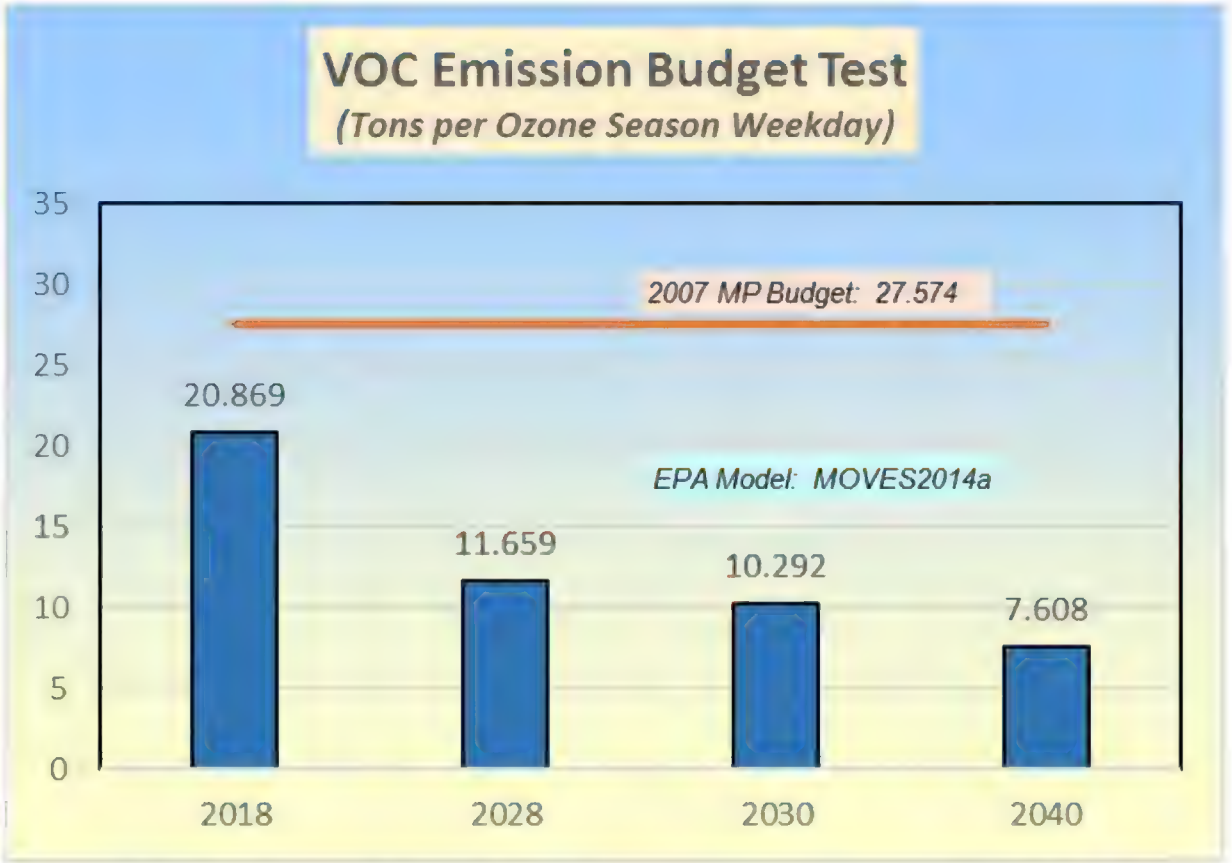
- Conformity Results
- Schedule
- TTAC Recommendation for approval

Key EPA Criteria for a Finding of Conformity

Federal Conformity Rule Requirement 40 CFR Section:	Criteria (40 CFR 93.109+)	Demonstrated by the 2040 LRTP & FY 18-21 TIP
93.108	Fiscal constraint (*Prerequisite*) (Final Determination with TPO)	Yes
93.110	Latest planning assumptions	Yes
93.111	Latest emissions model	Yes
93.112	Consultation	Yes
93.113(b) & (c)	TCMs	*n/a*
93.118	Emissions Budget	Yes

Emission Budget Tests*: 2040 LRTP & FY 18-21 TIP





* *Budgets as specified for ozone precursors (NO_x and VOC) in the "Maintenance Plan for the Hampton Roads Nonattainment Area..." for the 1997 Eight-Hour Ozone Standard, approved by EPA in June 2007. Emissions for both precursors were modeled using the US EPA model MOVES2014a.*

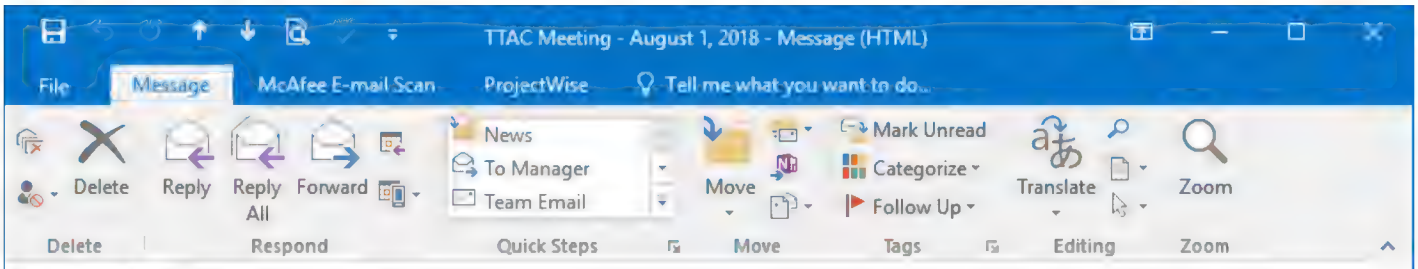
Schedule

August	• **1st: TTAC reviews & recommends approval of draft conformity analysis & finding, subject to receipt of no adverse comment in public review or none requiring TTAC review.** • **2nd: HRTPO Initiation of 14-day Public Review for the draft conformity analysis & finding** • *17th-21st as needed: VDOT/HRTPO staff review and draft response to comments received (if any) in public review, for consideration by the HRTPO.* • **29th: TPO approval, considering comments (if any) from public consultation and responses** *Next Day:* • *TPO approval letter issued and signed copy emailed to VDOT.* • *VDOT emails the Final Conformity Analysis with the TPO Letter to FHWA Division Office to initiate the federal review and approval process.* • *VDOT sends Final Report with TPO approval letter to printing.* *Federal review period (typically 45 days) begins upon receipt of the final report by email by FHWA Division Office, which coordinates the review with FTA and consults with EPA.*
September	• *12th: Target date for VDOT to transmit print copies of the Final Conformity Analysis and TPO Letter to FHWA for their records.*
October	• **15th: TARGET DATE for US DOT Finding of Conformity (*letter from FHWA*)**

Requested TTAC Action (see agenda)

- ***Approve the initiation of the public review of the draft transportation conformity analysis and finding of conformity for the 2040 LRTP and FY 2018-2021 TIP.***

- ***Recommend Board approval of the draft transportation conformity analysis and finding of conformity for the 2040 LRTP and FY 2018-2021 TIP, subject to no adverse comments received during the public review period.***



Wed 7/25/2018 4:22 PM

Shirley Core

TTAC Meeting - August 1, 2018

To: Anderson, Earl; Ayers, Britta; Belinda Harper; Benjamin Camras; Brown, Robert; Clayton, Daniel; Cross, Timothy; Drake, Thelma; Ducey-Ortiz, Anne; Earley, Sherry; Frank Brown - City of Portsmouth (brownf@portsmouthva.gov); Froncillo, Steven ; Gey, Robert; Goodwin, Donald; Hallums-Ponton, Sonya; Hansen, LJ; Hayes, Michael; Holt, Paul ; Jackson Carl - (jacksonc@portsmouthva.gov); Jackson, Jamie; Johnson, Michael W.; Kassel, Jacqueline; Lewis, Beth ; Lewis, Robert E.; Lowe, Lynette; Martin, Randy ; Mitchell, Jason ; Moore, Josh; Murphy, Carolyn; OConnell, Dannan; Odom, Dawn ; Oliver, Jamie; Pullen, Phil;

The next meeting of the **HRTPO Transportation Technical Advisory Committee (TTAC)** will be held on **Wednesday, August 1, 2018 at 9:30 a.m. in the Regional Board Room, 723 Woodlake Drive, Chesapeake, VA.**

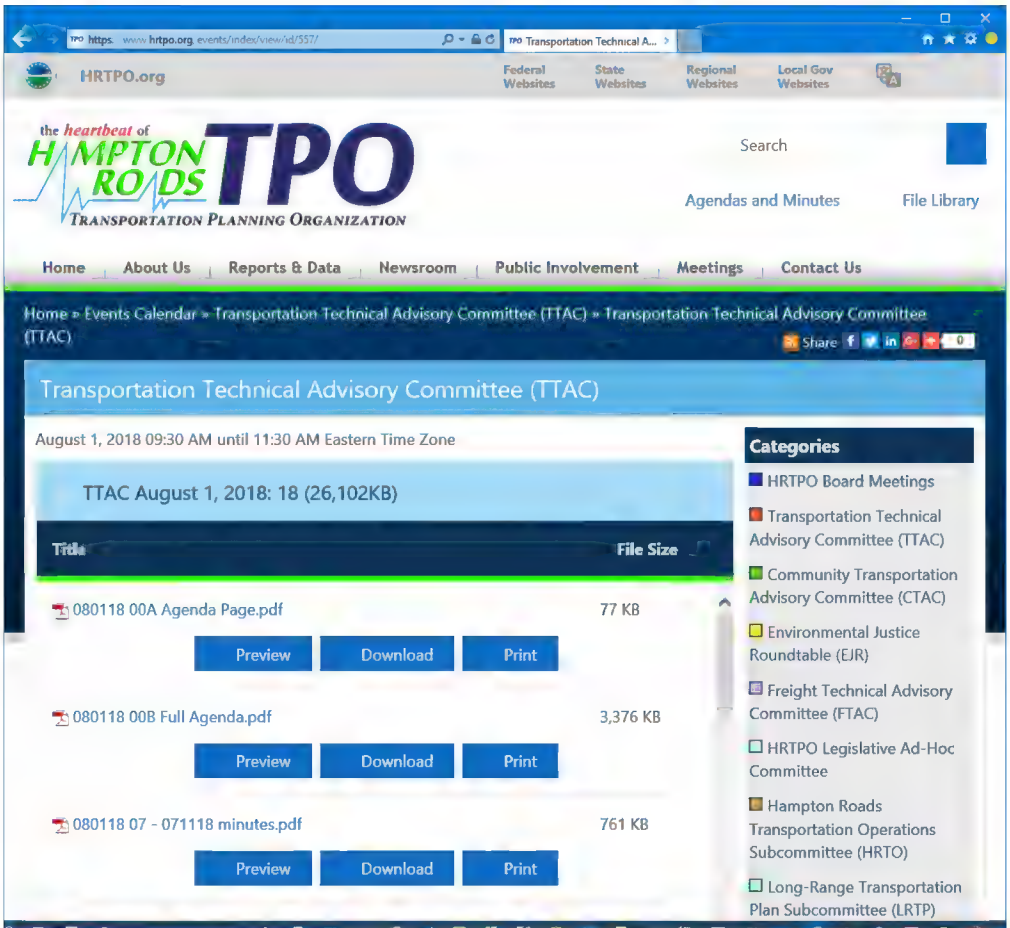
The agenda and related materials are now available on the HRTPO website. The direct link to the agenda and related information is: https://www.hrtpo.org/events/index/view/id/557

If you have any questions about this email, please let me know.

Thank you,

Shirley

Shirley Core
Administrative Assistant II
The Regional Building | 723 Woodlake Drive | Chesapeake | Virginia 23320
Phone: 757.420.8300 | Fax: 757.523.4881
score@hrtpo.org | http://www.hrtpo.org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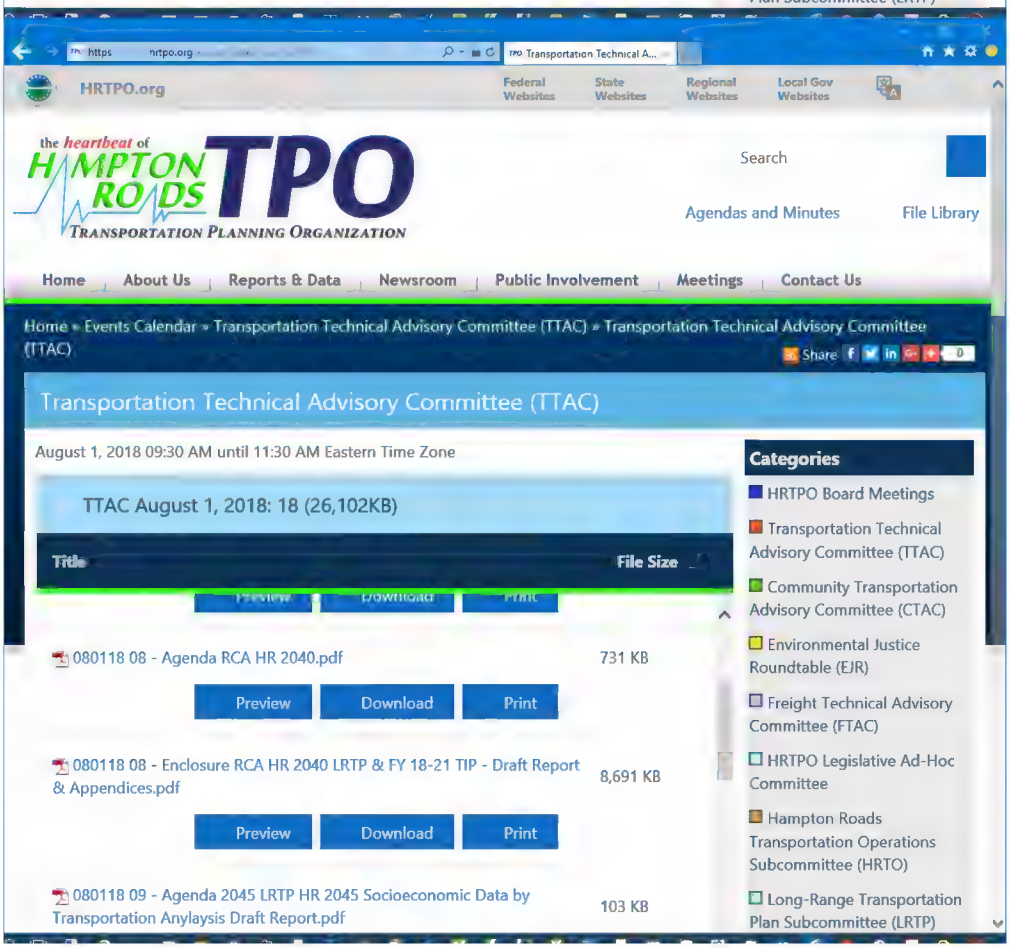
Hampton Roads Transportation Operations Subcommittee (HRTO)
Long-Range Transportation Plan Subcommittee (LRTP)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Hampton Roads Transportation Operations Subcommittee (HRTO)
Long-Range Transportation Plan Subcommittee (LRTP)

AGENDA ITEM #7: MINUTES

Summary minutes of the TTAC meeting held on June 6, 2018 are attached.

Attachment 7

RECOMMENDED ACTION:

Approve the minutes.

Summary Minutes of the HRTPO Transportation Technical Advisory Committee (TTAC) Meeting June 6, 2018

The HRTPO Transportation Technical Advisory Committee (TTAC) Meeting was called to order at 9:34 a.m. in the Regional Building Boardroom, 723 Woodlake Drive, Chesapeake, Virginia, with the following in attendance:

TTAC Voting Members in Attendance:

Paul Holt (Chair, JC)	Jeff Raliski (NO)	Phil Pullen (VB)
Sherry Earley (Vice Chair, SU)	Jackie Kassel (NN)	Brian Solis (VB)
Benjamin Camras (CH)	Bridjette Parker (NN)	Carolyn Murphy (WM)
Earl Sorey (CH)	Bryan Stilley (NN)	Tim Cross (YK)
Donald Goodwin (FR)	Carl Jackson (PO)	Jennifer Debruhl (DRPT)
Carol Rizzio (GL)	Dannan O'Connell (PQ)	Jamie Jackson (HRT)
Lynn Allsbrook (HA)	Beth Lewis (SH)	Sonya Hallums-Ponton (VDOT)
John Yorks (HA)	Robert Lewis (SU)	Dawn Odom (VDOT)
Robert Brown (NO)	LJ Hansen (SU)	Eric Stringfield (VDOT)
Thelma Drake (NO)	Robert Gey (VB)	Josh Moore (WATA)

TTAC Voting Members Absent:

Steve Froncillo (CH)	Britta Ayers (NN)	Dan Clayton III (WM)
Anne Ducey-Ortiz (GL)	Claudia Cotton (Alternate, NN)	Aaron Small (WM)
Mike Hayes (HA)	Garrett Morgan (NN)	J. Mark Carter (YK)
Angela Rico (HA)	Ellen Roberts (PQ)	Jeff Florin (VPA)
Jamie Oliver (IW)	Debbie Vest (PQ)	Bryant Porter (VDOT)
Richard Rudnicki (IW)	James Wright (PO)	
Tammy Rosario (JC)	Jason Souders (SU)	

TTAC Nonvoting Members in Attendance:

Rhonda Murray (NAVY)	Chris Arabia (DRPT)

TTAC Nonvoting Members Absent:

Melissa McGill (FTA)	Ivan Rucker (FHWA)

HRTPO Staff:

Sam Belfield	Uros Jovanovic	Keith Nichols
Theresa Brooks	Steve Lambert	Leonardo Pineda
Kathlene Grauberger	John Mihaly	Joe Paulus
Mike Kimbrel	Kendall Miller	Dale Stith

Others Recorded Attending:

Frank Brown III (Portsmouth); Ken Yarberry (RK&K); Keisha Branch (HRT); Bekki Jucksch (Kimely-Horn); Bob Scott (MJ Synergy Group); Jim Ponticello, Caleb Brooks, Sharonda Hawkins, Keisha Wilkins, Nathan Milaszawski, Angela Biney, Jerry Pauley, Chris Voight (VDOT): Doris McLeod, Sonya Lewis-Cheatham (VADEQ): Mike Snare (HNTB); Samuel Hayes (Moffatt & Nichol); Stephen Rowan (Rowan Consulting); Alec Jensen, Lauren Shirley (Virginia Beach); Kevin Page (HRTAC) Mike Long, Chris Vaigneur (HRPDC Staff).

Introductions

Mr. Carl Jackson introduced Mr. Frank Brown, City of Portsmouth Senior Civil Engineer. He noted he would be serving as an alternate on the TTAC committee. Mr. Robert Gey, City of Virginia Beach introduced two interns Alec Jensen and Lauren Shirley.

Public Comment Period

There were no public comments.

Submitted Public Comments

There were no submitted public comments in the agenda packet.

Comments and Updates from State and Federal Agencies and the Military

There were no comments from the Federal Highway Administration.

Mr. Eric Stringfield, announced that 128 SMART SCALE pre-applications have been submitted noting the deadline is June 8, 2018 at 5pm.

There were no representatives present from the Virginia Port Authority.

Ms. Rhonda Murray, mentioned an announcement was made in the newspaper regarding the Hampton Roads Crossing Study reevaluation. VDOT will be conducting an environmental assessment and will hold public meetings on June 19th and June 20th.

Ms. Jennifer Debruhl, advised the Transit Service Delivery Advisory Committee would meet tomorrow in Richmond. She noted the meeting would be live streamed. The purpose of the meeting is to work on further policy questions and vetting out the process for major expansion transit capital projects and strategic plans. She announced transit reforms are running ahead of schedule, and that DRPT staff will be briefing the Commonwealth Transportation Board (CTB) later this month. DRPT plans to have a full transit funding policy in draft form by August.

Approval of Agenda

Chair Holt asked for additions or deletions to the TTAC Agenda. Chair Holt requested to add a Resolution of Support for Mr. Lynn Allsbrook, City of Hampton. Chair Holt then thanked Mr. Allsbrook for his service to the TTAC and his twenty-four years of contributions to Hampton Roads Mr. Sorey Moved to approve the amended Agenda; seconded by Ms. Kassel. The Motion Carried.

Summary Minutes

Chair Holt reported that the TTAC summary minutes from May 2, 2018 meeting were included in the June 6, 2018 TTAC Agenda Packet. Chair Holt asked for any additions or corrections to the minutes. Hearing none, Mr. Cross Moved to approve the minutes; seconded by Mr. Moore. The Motion Carried.

HRTPO 2040 Long-Range Transportation Plan (LRTP) and FY 2018-2021 Transportation Improvement Program (TIP): Regionally Significant Projects for Transportation Conformity

Ms. Dale Stith, HRTPO Principal Transportation Planner, briefed the committee last month on the FHWA-FTA Interim Guidance on Conformity Requirements. She noted until additional guidance from the EPA clarifying possible impacts is received, some actions within identified areas should be considered "on-hold". These actions include amendments to the LRTP, TIP and STIP associated with projects that are non-exempt from transportation conformity, until conformity with the 1997 8-hour ozone NAAQS is determined. She reiterated, according to the FHWA-FTA Interim Guidance, amendments for non-exempt projects such as regionally significant construction projects would trigger a Transportation Conformity analysis. This guidance affects pending requests such as an amendment request related to the I-64 Hampton Roads Bridge Tunnel (HRBT) widening project.

In May, the HRTPO Board approved the initiation of a Transportation Conformity Analysis on the 2040 LRTP and FY 2018-2021 TIP with an expedited schedule. The TPO board approved a resolution that authorizes the TTAC to approve the project list for Transportation Conformity and any related planning assumptions and initiate the public review of the draft Transportation Conformity Analysis Report. Ms. Stith directed committee members to a draft list of regionally significant projects for conformity noting the list was included in the agenda packet. The list was coordinated with local, regional, state, and federal partners. The list includes the known pending amendments to both the HRPTO 2040 LRTP and FY 2018-2021TIP.

Next steps include approval of the draft list of regionally significant projects from the 2040 LRTP and FY 2018-2021 TIP for transportation conformity analysis and approval of an August 1, 2018 meeting of the TTAC. She noted the importance of having a quorum at that meeting.

Mr. Moore Moved to approve the draft project list of regionally significant projects for the 2040 LRTP and FY 2018-2021 TIP for transportation conformity analysis; seconded by Mr. Yorks. The Motion Carried.

Mr. Moore Moved to add an August 1, 2018 meeting to the TTAC 2018 meeting calendar; seconded by Mr. Solis. The Motion Carried.

Chair Holt paused the TTAC meeting to conduct the Interagency Consultation Group (ICG) Meeting.

The following ICG members participated via conference call:

Gregory Becoat (EPA); Ivan Rucker (FHWA); Melissa McGill (FTA); Tom Ballou (VDEQ); Peng Xiao (VDOT).

Interagency Consultation Group (ICG) Meeting

Mr. Jim Ponticello, VDOT Air Quality & Noise Program Manager, presented the key criteria from the Transportation Conformity Rule. He stated key criteria from the Conformity Rule has to be met in order to receive a favorable conformity finding. The criteria include, fiscal constraint, latest planning assumptions, latest emissions model, consultation requirements, transportation control measures, and motor vehicle emissions budgets. As part of the regional conformity analysis consultation the Hampton Roads Interagency Consultation Group (ICG) members were asked to review and comment on the draft schedule, models, methods and assumptions, and regionally significant projects. Mr. Ponticello presented a slide with an updated list of ICG committee members and asked for any additions or deletions. He noted the Hampton Roads Air Quality Committee would be represented in the Group as a voting member by the Virginia Department of Environmental Quality (VDEQ) member. He stated Hampton Roads needs to meet the motor vehicle emission budgets from the VDEQ Air Quality Maintenance Plan and must be under the set levels from the table shown. The model used to analyze emissions for the region will be the Environmental Protection Agency (EPA) MOVES2014. The pollutants of concern are Nitrogen Oxides (NOx) and Volatile Organic Compounds (VOC). The modeling years that will be evaluated are 2018, 2028, 2030, and 2040. The conformity rule requires utilizing the last year in the Long Range Transportation Plan and also requires no more than 10 years between analysis years. Mr. Ponticello asked Mr. Greg Becoat about the conformity analysis years, specifically 2018. Per Mr. Becoat the analysis year of 2018 is still under discussion with the office of General Counsel. Mr. Ponticello stated that with the absence of further guidance from EPA the ICG will be moving forward with the year 2018. Mr. Ponticello acknowledged if he receives further guidance from the EPA he will inform the ICG.

FY 2018-2021 TIP REVISION REQUEST: REQUEST TO TRANSFER CMAQ FUNDING: UPC 103025 – PORTSMOUTH

Mr. Carl Jackson, City of Portsmouth Manager of Transportation Planning, requested to amend the FY 2018-2021 Transportation Improvement Program (TIP) to transfer a total of $1,001,762 in Congestion Mitigation and Air Quality Improvement Program (CMAQ) funds from one cancelled project and two completed projects to one CMAQ project due to a cost increase, one CMAQ project to make it whole, and to the HRTPO CMAQ Reserve Account. The specifics of the request are described below:

- UPC 103025 – Portsmouth Traffic Signal Updates
    - Revise Cost Estimate as follows:
        - Preliminary Engineering (PE): $720,000

        - Right of Way (RW): $0
        - Construction (CN): $4,216,344
        - Total Cost Estimate: $4,936,344
    - Receive $153,748 of FY 2008 CMAQ funds, including State match, from Resignalization of Alexander's Corner (UPC 83438)
    - Receive $282,596 of FY 2008 CMAQ funds, including State match, from Airline Blvd. Coordinated Signal Upgrade from Alexander's Corner to WCLL (UPC 82858)
    - Receive $500,000 of FY 2017 CMAQ funds, including State match, from Portsmouth Blvd/Elmhurst Lane Intersection Improvements (UPC 100602)

- UPC 12972 – Portsmouth Citywide Upgrade Signal System/Sign System
    - Receive $12,619 of FY 2008 CMAQ funds, including State match, from Resignalization of Alexander's Corner (UPC 83438) in order to make project whole

- HRTPO CMAQ Reserve Account
    - Receive $53,184 of FY 2008 CMAQ funds, including State match, from Resignalization of Alexander's Corner (UPC 83438)

Should the HRTPO Board approve the CMAQ fund transfer described above, the FY 2018-2021 Transportation Improvement Program (TIP) will be amended to update the funding information associated with the affected projects.

Mr. Moore MOVED to recommend HRTPO approval of the TIP Amendment; seconded by Ms. Kassel. The Motion Carried

FY 2018-2021 TIP REVISION – REQUEST TO TRANFER CMAQ FUNDING: UPC T10862 – WATA

Mr. Josh Moore, WATA Deputy Executive Director, requested to amend the FY 2018-2021 Transportation Improvement Program (TIP) to transfer a total of $42,450 in Congestion Mitigation and Air Quality Program (CMAQ) funds from one completed project to another CMAQ eligible project in the City to cover additional operating funding needs. The specifics of the request are described below:

- UPC T10862 – Demonstration Route – Route 11 Mounts Bay/Quarterpath
    - Receive $42,450 of FY 2013 CMAQ funds, including State match, from Demonstration Route Jamestown (T9150)

Should the HRTPO Board approve the CMAQ fund transfer described above, the FY 2018-2021 Transportation Improvement Program (TIP) will be amended to update the funding information associated with the affected projects.

Mr. Cross MOVED to recommend HRTPO approval of the TIP Amendment; seconded by Ms. Kassel. The Motion Carried

FY 2018-2021 TIP REVISION: REQUEST TO TRANSFER CMAQ FUNDING: UPC 98815 – SUFFOLK

Ms. Sherry Earley, Suffolk Public Works Assistant Director/City Engineer, requested to amend the FY 2018-2021 Transportation Improvement Program (TIP) to transfer a total of $54,030 in Congestion Mitigation and Air Quality Program (CMAQ) funds from one completed project to another CMAQ eligible project in the City to cover an increase in the cost estimate. The specifics of the request are described below:

- UPC 98815 – Godwin Boulevard Park and Ride Lot
  - Revise Cost Estimate as follows:
    - Total Cost Estimate: $1,184,030
  - Receive $54,030 in FY 2013 CMAQ funds, including State match, from Bridge Road and Bennett's Pasture Road Intersection Improvements (UPC 100604)

Should the HRTPO Board approve the CMAQ fund transfer described above, the FY 2018-2021 Transportation Improvement Program (TIP) will be amended to update the funding information associated with the affected projects.

Mr. Lewis MOVED to recommend HRTPO approval of the TIP Amendment; seconded by Mr. Allsbrook. The Motion Carried

HRTPO Annual Roadway Performance Report – 2018 Edition: Draft

Mr. Keith Nichols, HRTPO Principal Transportation Engineer, explained the draft report includes peak period congestion maps, regional congestion summaries, and existing and historical travel times for selected corridors. The report also includes regional weekday traffic by volumes for the previous six years, peak period speed, travel time index data and peak period congestion levels. The next steps for the draft include a public review through June 22, 2018. Approval of the final document will be requested at the July 2018 TTAC and TPO Board meetings.

Hampton Roads 2015 Transportation Analysis Zones & Boundary Modifications: Draft

Mr. Leonardo Pineda, HRTPO Transportation Planner II, reminded the Committee that Transportation Analysis Zones (TAZs) are the base geographical unit of analysis for travel demand models. The HRTPO's TAZs were last updated in 2000. Following the March/April Socioeconomic review, HRTPO staff adjusted TAZs based on feedback and guidelines, cleaned up TAZ boundaries to align with census boundaries, and met with localities to review changes made to boundaries. TAZs for all localities have been cleaned up and aligned to Census boundaries. Seven localities had modifications to their TAZs. Next steps include approval of TAZ boundaries and base year data at the July 2018 HRTPO Board, initiate process of allocation of 2045 control totals (by locality) by August 2018, and approval of 2045 TAZ allocations at the October 2018 HRTPO Board meeting.

He requested comments be submitted to Leo Pineda (lpineda@hrtpo.org) by Friday, June 29, 2018.

Hampton Roads 2040 Long-Range Transportation Plan: Proposed Amendment: I-64 Express Lanes – Segment II (PE Only)

Ms. Dawn Odom, VDOT District Planning and Investment Manager, requested to amend the Hampton Roads 2040 Long-Range Transportation Plan (LRTP) to add the following project described below:

- UPC 112923 – I-64 Express Lanes – Segment II Preliminary Engineering (PE) only.
  - Add project to LRTP
  - Description: Extend I-64 HOT lanes – 2 lanes from I-264 to I-664/I-264 Interchange at Bowers Hill.
  - Project Phase Schedule as follows:
    - Preliminary Engineering (PE): Start 7/16/2018: End 5/12/2019
  - Cost Estimate as follows:
    - Preliminary Engineering (PE): $3,500,000
    - Total: $3,500,000
  - Funding as follows:
    - FY 2019 of $3,500,000 Other Toll – Toll Facilities Revolving Account
    - The Commonwealth Transportation Board passed a resolution authorizing funds from the Toll Facilities Revolving Account in September2017. http://www.ctb.virginia.gov/resources/2017/sept/reso/resolution_8_desig_hot_lanes.pdf

The proposed LRTP amendment was made available for public review and comment, beginning on May 31, 2018 and concluding on June 14, 2018.

Mr. Sorey MOVED to recommend HRTPO approval of the TIP Amendment; seconded by Mr. Cross. The Motion Carried

2018 CMAQ/RSTP Project Selection Process: Overview and Timeline

Mr. John Mihaly, HRTPO Senior Transportation Planner, outlined the HRTPO annual selection process for projects proposed to be funded under the Congestion Mitigation and Air Quality Improvement Program (CMAQ) and Regional Surface Transportation Program (RSTP). He noted a list of eligible recipients and reported FY 2025 estimated available funding for CMAQ and RSTP is $15 million and $36.3 million, respectively. He provided an outline of important dates as follows:

- **June 20, 2018 –** Deadline for submitting requests for CMAQ and RSTP Reserve funds
- **July 20, 2018 –** Transportation Programming Subcommittee (TPS) to discuss allocation of excess CMAQ and RSTP Reserve funds
- **July 31, 2018 –** Deadline for the Public to submit ideas for potential CMAQ/RSTP funding
- **August 15, 2018 –** Deadline for applications from eligible applicants
- **September 28, 2018 –** Project evaluations completed by HRTPO Staff
- **October 19, 2018 –** TPS to review scored projects and recommend funding allocations

- **November 7, 2018 –** TTAC to consider recommendations of the TPS and to adopt recommendations for the HRTPO Board
- **November 15, 2018–** HRTPO Board to make final approval of CMAQ/RSTP projects and funding

He announced that updated project application forms, the ***Guide to the HRTPO CMAQ/RSTP Project Selection Process,*** and other resources may be accessed on the HRTPO website at: http://www.hrtpo.org/page/cmaq-and-rstp/. He requested CMAQ/RSTP project applications to be submitted to John Mihaly (jmihaly@hrtpo.org) by COB Wednesday, August 15, 2018.

Three-Month Tentative Schedule

Chair Holt outlined the Three-Month Tentative Schedule in the Agenda Packet noting the July TTAC meeting will be held on Wednesday, July 11, 2018 due to the Independence Day Holiday.

For Your Information

Chair Holt reviewed the items in the For Your Information section of the Agenda Packet.

Announcements

Mr. Mike Kimbrel, HRTPO Deputy Executive Director, reminded the committee that requests for HRTPO Board Resolutions of Support to accompany SMART SCALE applications need to be received by June 30, 2018.

Ms. Thelma Drake, City of Norfolk, asked the committee to consider sending a letter to VDOT concerning the inactivation of EZ Pass transponders. Mr. Earl Sorey, City of Chesapeake stated inactivating transponders would have an effect on the Chesapeake Expressway. Chair Holt stated he would support this item as a TTAC topic.

Chair Holt asked Ms. Stith for a SMART SCALE update. She replied she had briefed the TPO Board at the May meeting. She then read the recommended actions from the May HRTPO Board meeting. She stated both items were approved by the Board. She requested TTAC members to submit request for Resolutions of Support for SMART SCALE projects to the TPO board by June 30, 2018, noting if a Resolution of Support was required and the projects met the guidelines a resolution would be issued.

Old/New Business

Mr. Robert Lewis, asked if the August meeting could be conducted electronically. Mr. Mike Kimbrel, stated he thinks FOIA laws would prohibit an electronic meeting but HRTPO staff will research.

Adjournment

With no further business to come before the Hampton Roads Transportation Technical Advisory Committee, the meeting adjourned at 11:00 a.m.

AGENDA ITEM #8: HRTPO 2040 LONG-RANGE TRANSPORTATION PLAN AND FY 2018-2021 TRANSPORTATION IMPROVEMENT PROGRAM: REGIONALLY SIGNIFICANT PROJECTS FOR TRANSPORTATION CONFORMITY
Dale Stith, HRTPO

Federal requirements to address transportation conformity for the 1997 National Ambient Air Quality Standard (NAAQS) for ozone, for which the Hampton Roads region had been in "maintenance" status, were revoked by the Environmental Protection Agency (EPA) effective April 6, 2015 (Federal Register, Volume 80, Number 44, March 6, 2015). With the revocation of the 1997 NAAQS for ozone, transportation conformity was no longer required for the Hampton Roads region.

On April 23, 2018, FHWA and FTA issued *Interim Guidance on Conformity Requirements for the 1997 Ozone NAAQS,* in response to the US Court of Appeals for the DC Circuit February 16, 2018 decision in *South Coast Air Quality Management District v. EPA*, No. 15-1115, which struck down portions of the *2008 Ozone NAAQS SIP Requirements Rule* concerning the ozone NAAQS. According to the *FHWA-FTA Interim Guidance,* any updates and amendments to the Long-Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP) for projects "not exempt from transportation conformity may not proceed until transportation conformity with the 1997 ozone NAAQS is determined." The *FHWA-FTA Interim Guidance* is intended to stay in effect until further clarification is received from the EPA regarding possible impacts.

Based upon the *FHWA-FTA Interim Guidance*, the HRTPO Board approved the initiation of Transportation Conformity on the 2040 LRTP and the FY 2018-2021 TIP at its May 17, 2018 meeting. Additionally, in order to expedite the transportation conformity analysis process and avoid unintentional project delays, the HRTPO Board approved a Resolution authorizing TTAC to approve the project list for the conformity analysis (and any related planning assumptions), and to initiate the public review of the draft analysis.

HRTPO staff coordinated with localities and state and federal partners to determine projects of regional significance to include in the Draft List of Regionally-Significant Projects for Conformity for the 2040 LRTP and FY 2018-2021 TIP. Also included on this List are pending amendments to both the LRTP and TIP.

Since this conformity process is on an expedited schedule to help prevent unnecessary project delays, TTAC will meet in August. Please check your calendars and be prepared to vote to meet on either August 1st or August 8th; **a quorum is essential as there will be conformity action items**. August 8th is offered as an alternate meeting date in order to give VDOT an extra week to prepare the analysis.

Ms. Dale M. Stith, Principal Transportation Planner, will brief the TTAC on this item.

Attachment 8: HRTPO Resolution 2018-04

Enclosure 8: *Draft List of Regionally-Significant Projects for Conformity for the 2040 LRTP and FY 2018-2021 TIP*

RECOMMENDED ACTIONS:

A. Approve the draft list of regionally-significant projects for the 2040 LRTP and FY 2018-2021 TIP for transportation conformity analysis.

B. Approve the next meeting of TTAC as Wednesday, August 1st or August 8th with a start time of 9:30 a.m.

the heartbeat of HAMPTON ROADS TPO
TRANSPORTATION PLANNING ORGANIZATION

HAMPTON ROADS TRANSPORTATION PLANNING ORGANIZATION
BOARD RESOLUTION 2018-04

A RESOLUTION OF SUPPORT FROM THE HAMPTON ROADS TRANSPORTATION PLANNING ORGANIZATION (HRTPO) AUTHORIZING THE HRTPO TRANSPORTATION TECHNICAL ADVISORY COMMITTEE TO APPROVE CERTAIN PROCESSES RELATED TO TRANSPORTATION CONFORMITY.

WHEREAS, the Hampton Roads Transportation Planning Organization (HRTPO), designated by the Governor of the Commonwealth of Virginia in accordance with Section 134, Title 23, United States Code (23 USC 134) and applicable federal and state regulations, is the policy body responsible for the urban transportation planning and programming process of the Hampton Roads metropolitan planning area;

WHEREAS, the Hampton Roads metropolitan planning area includes the cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg; the counties of Isle of Wight, James City, and York; and portions of the City of Frankin and the Counties of Gloucester and Southampton;

WHEREAS, on July 21, 2016, the HRTPO Board approved and adopted the fiscally-constrained Hampton Roads 2040 Long-Range Transportation Plan (LRTP);

WHEREAS, transportation conformity is a Clean Air Act requirement that connects air quality and transportation planning activities to ensure that highway and transit project activities receiving federal funds are consistent with the purpose of the State Implementation Plan (SIP) for clean air;

WHEREAS, transportation conformity applies to areas that are designated "nonattainment" or "maintenance" for transportation-related criteria pollutants as specified under the National Ambient Air Quality Standards (NAAQS);

WHEREAS, the Hampton Roads region is currently in "attainment" of all applicable NAAQS;

WHEREAS, federal requirements to address transportation conformity for the 1997 NAAQS for ozone, for which the Hampton Roads region had been in "maintenance" status, were revoked by the Environmental Protection Agency (EPA) effective April 6, 2015 (Federal Register, Volume 80, Number 44, March 6, 2015), and that with the revocation of the 1997 NAAQS for ozone, transportation conformity was no longer required for the Hampton Roads region;

WHEREAS, On April 23, 2018, Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) issued *Interim Guidance on Conformity Requirements for the 1997 Ozone NAAQS*, in response to the US Court of Appeals for the DC Circuit February 16, 2018 decision in *South Coast Air Quality Management District v. EPA*, No. 15-1115, which struck down portions of the 2008 Ozone NAAQS SIP Requirements Rule concerning the ozone NAAQS and that according to the FHWA-FTA Interim Guidance, any updates and amendments to the LRTP and Transportation Improvement Program (TIP) for projects "not exempt from transportation conformity may not proceed until transportation conformity with the 1997 ozone NAAQS is determined"; and

WHEREAS, The *FHWA-FTA Interim Guidance* is intended to stay in effect until further clarification is received from the EPA regarding possible impacts.

NOW, THEREFORE, BE IT RESOLVED, based upon the *FHWA-FTA Interim Guidance* and in order to expedite the transportation conformity analysis process and avoid unintentional project delays, the HRTPO Board approves the initiation of transportation conformity on the 2040 Long-Range Transportation Plan and the FY 2018-2021 Transportation Improvement Program; and

BE IT FURTHER RESOLVED that the HRTPO Board authorizes the Transportation Technical Advisory Committee to approve the project list for transportation conformity, any related planning assumptions, and to initiate the public review of the draft transportation conformity analysis.

APPROVED and ADOPTED by the Hampton Roads Transportation Planning Organization Board at its meeting on the 17th day of May, 2018.

Thomas G. Shepperd, Jr. Chair Hampton Roads Transportation Planning Organization	Robert A. Crum, Jr. Executive Director Hampton Roads Transportation Planning Organization

VDOT
Virginia Department of Transportation

HAMPTON ROADS REGIONAL CONFORMITY ANALYSIS
2040 LONG RANGE TRANSPORTATION PLAN &
FY 18-21 TRANSPORTATION IMPROVEMENT PROGRAM

Hampton Roads TTAC - Interagency Consultation Group Meeting Item

June 6, 2018 – 9:30 a.m.

HRTPO Regional Boardroom

Christopher Voigt, VDOT Air Quality

Agenda

EPA Transportation Conformity Rule Requirements

- Key Criteria for a Regional Conformity Analysis (RCA)
- Consultation Requirements

Proposed Approach for this RCA

- Schedule
- Models, Methods & Assumptions
- Regionally Significant Project List (HRTPO/VDOT)

Approvals

Key Criteria – EPA Transportation Conformity Rule

Federal Conformity Rule Requirement 40 CFR Section:	Criteria (40 CFR 93.109+)	Demonstrated
93.108	Fiscal constraint (*Prerequisite*) (Final Determination with TPO)	
93.110	Latest planning assumptions	
93.111	Latest emissions model	
93.112	Consultation	
93.113(b) & (c)	TCMs	*n/a*
93.118	Emissions Budget	

Consultation Requirements

Regulations & Guidance:

- Federal and State Transportation Conformity Rules
- "*Consultation Procedures For the Hampton Roads Ozone Nonattainment Area In Support of the Transportation Conformity Regulations*", aka 2005 Inter-Agency Consultation Group (ICG) Procedures
- Public Consultation per Hampton Roads Public Participation Plan (2015)

For a RCA, consultation is specifically required for:

- ICG Membership (Organizations):
  - Attachment 9-A (Updated ICG Member list)
- Draft Schedule (ICG Procedural Requirement)
  - Attachment 9-B
- Models, Methods and Assumptions (MMA), including the applicable conformity tests (motor vehicle emission budgets or MVEBs)
  - Enclosure 9-A (Draft report text)
- Regionally Significant Projects (RSPs) List
  - Enclosure 9-B

Hampton Roads Interagency Consultation Group (ICG)

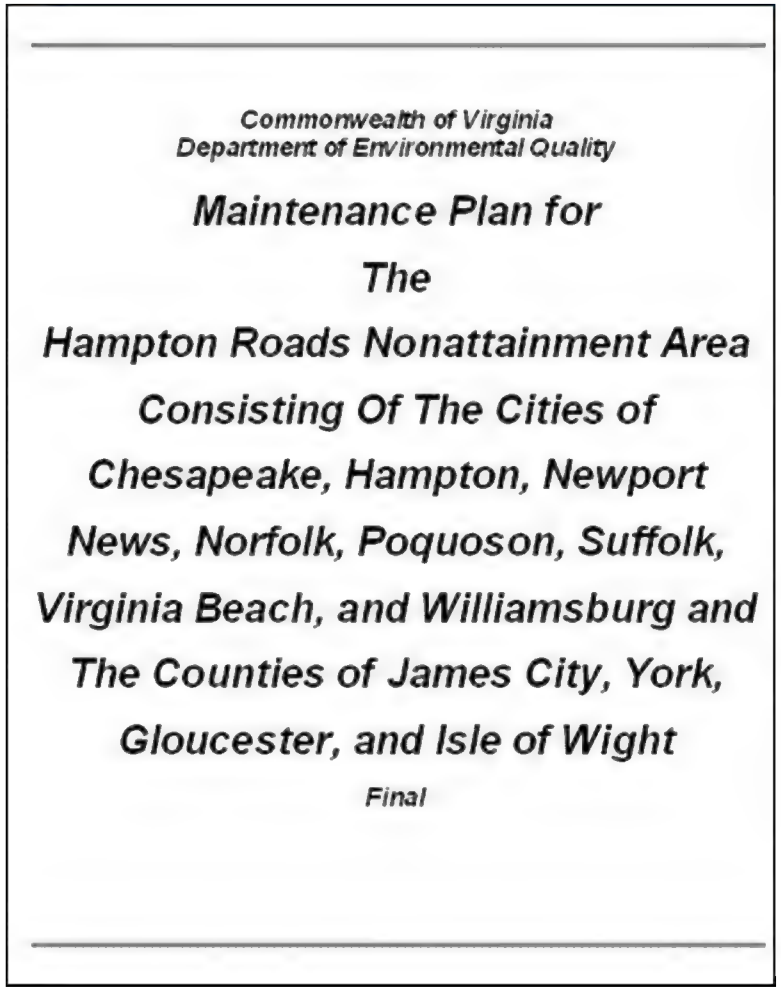
As of 6/5/2018

Agency	Member	Alternate
City/County		
City of Chesapeake	Earl Sorey	Steve Froncillo
City of Hampton	John Yorks	Michael Hayes
City of Newport News	Jacqueline Kassel	Bridjette Parker
City of Norfolk	Jeffrey Raliski	
City of Poquoson	Dannan O'Connell	Deborah Vest
City of Portsmouth	James Wright	
City of Suffolk	Robert Lewis	Sherry Earley
City of Virginia Beach	Brian Solis	Tara Reel
City of Williamsburg	Carolyn Murphy	Aaron Small
Gloucester County	Carol Rizzio	Anne Ducey-Ortiz
Isle of Wight County	Richard Rudnicki	
James City County	Paul Holt	Tammy Rosario
York County	Timothy Cross	
Regional		
Hampton Roads Transportation Planning Organization	Dale Stith	Theresa Brooks
Hampton Roads Transit	Jamie Jackson	Keisha Branch
Williamsburg Area Transit Authority	Josh Moore	Barbara Creel
Hampton Roads Air Quality Committee (HRAQC)	*VDEQ Proxy**	

Agency	Member	Alternate
State		
Virginia Dept. of Environmental Quality*	Sonya Lewis-Cheatham	
Virginia Dept. of Rail & Public Transportation	Jennifer DeBruhl	Chris Arabia
Virginia Dept. of Transportation – C/O Environmental	Jim Ponticello	Christopher Voigt
Virginia Dept. of Transportation – C/O Planning	Peng Xiao	
Federal		
Environmental Protection Agency	Gregory Becoat	
Federal Highway Administration	Ivan Rucker	
Federal Transit Administration	Melissa McGill	
Non-Voting		
US Navy	Rhonda Murray	

** The VDEQ representative serves as the HRAQC (LPO) representative as needed.*

MMA: Motor Vehicle Emission Budgets (MVEBs) from the 2007 VDEQ Air Quality Maintenance Plan (MP)



Commonwealth of Virginia
Department of Environmental Quality

Maintenance Plan for

The

Hampton Roads Nonattainment Area

Consisting Of The Cities of

Chesapeake, Hampton, Newport

News, Norfolk, Poquoson, Suffolk,

Virginia Beach, and Williamsburg and

The Counties of James City, York,

Gloucester, and Isle of Wight

Final

Table 5.2-1
Hampton Roads Area VOC, NO_X, and CO Emissions from 2005 to 2018

Volatile Organic Compounds (VOC) in Tons/Day					
Year	Point	Area[1]	Nonroad	Mobile[3]	Total (tons/day)
Year 2005	20.091	91.980	42.320	50.591	204.982
Year 2011	23.280	100.960	33.912	37.846	195.998
DIFF. (05-11)	3.189	8.980	-8.408	-12.745	-8.984
Year 2018	26.700	112.790	31.315	27.574	198.379
DIFF. (05-18)	6.609	20.810	-11.005	-23.017	-6.603
Nitrogen Oxides (NO_X) in Tons/Day					
Year	Point	Area[2]	Nonroad	Mobile[3]	Total
Year 2005	62.536	55.207	30.208	78.169	226.120
Year 2011	69.333	56.974	29.116	50.387	205.810
DIFF. (05-11)	6.797	1.767	-1.092	-27.782	-20.310
Year 2018	75.241	60.105	23.093	31.890	190.329
DIFF. (05-18)	12.705	4.898	-7.115	-46.279	-35.791

MMA: Emission Modeling Overview

TRAVEL MODELING:

NETWORK (93.122(b)): HRTPO/ VDOT Travel Demand Model

93.110: Latest planning assumptions
- – Socioeconomic forecasts
- – Regionally significant projects (Plan/TIP list)

93.122(b)(1)(i): NW models must be validated for a base year not > 10 years prior to date of conformity determination (2009)

93.122(b)(3): Factors determined from base year NW model vs HPMS VMT comparisons may be applied for future VMT forecasts.

OFF-NETWORK (93.122(a)):

- **VDOT VMT projections** for local roads as needed.
- **Annual growth rate:** Derived from 2040 LRTP socioeconomic forecasts for auto ownership

EMISSION MODELING:

Latest emission model: EPA MOVES2014a Model

MOVES Modeling Inputs:

- VMT (NW & Off-NW) from the prior step
- Otherwise from or consistent with those applied in the most recent VDEQ *Periodic Emission Inventory* (2014)
  - *Temperature and relative humidity from the 2007 Maintenance Plan*
  - *As such, all emission model inputs (including temperatures) are considered consistent with those applied in the 2007 MP or otherwise "represent a logically-estimated trend" (per 93.122(a)(6))*

Military Base Contributions:

Small additions to emissions, as specified in the VDEQ 2007 Maintenance Plan

Total Emissions: MOVES modeling results plus military base contributions

MODELING RESULTS:

Pollutants: NO_x and VOC (ozone precursors)

Modeling Years *(per EPA conformity requirements)*:

2018: Budget year from MP *(Tentative pending EPA guidance)*

2028 & 2030: EPA 10-year rule (*93.118(d)(2)*)

2040: LRTP horizon year

MVEBs (2007 MP):

Forecast total emissions must not exceed MVEBs to pass conformity for all applicable modeling years.

MMA: Socioeconomic Forecasts

Year	Hampton Roads Modeling Area			
	Population	Households	Autos	Total Employment
2018	1,733,166	650,101	1,365,329	1,101,591
2028	1,850,806	698,085	1,478,787	1,170,236
2030	1,874,347	707,694	1,501,488	1,183,977
2040	1,992,000	755,700	1,614,900	1,252,600

Source: HRTPO Communication, 5/30/2018

** The projections for 2040 were adopted by the Hampton Roads TPO in November 2012. The projections for other years were developed by interpolation, by TAZ, between 2009 and 2040, by TPO staff. 2018 is tentatively included pending guidance from EPA.*

*** Regulatory requirement - 40 CFR 93.110(b), following CAA 176(c)(1): "Assumptions must be derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO or other agency authorized to make such estimates and approved by the MPO…"*

MMA: Regionally Significant Projects

Project List: Enclosure 9-B

- Generated by TPO & District planning staff.

Key Federal Requirements:

- Regional significance (40 CFR 93.122(a)(1))
  - *Definition in 40 CFR 93.101*
- Requirement for fiscal constraint (40 CFR 93.108)
- Requirement for TIP project/phase consistency with the Plan (23 CFR 450.326i)

Project List Adjustments (if any):

- Any changes today are subject to approval by the TTAC and/or TPO as needed
- If changes are made later, then may need to restart the conformity analysis

RCA Schedule *(See Attachment 9-B for more detail)*

MAY 2018: Project List Development

- **TPO & District staff preparation of the regionally significant project list for modeling for the 2040 LRTP & FY 18-21 TIP**

JUNE 6: RCA Kickoff

- **TTAC Action: Approves regionally significant project list for the RCA** *(authority delegated from TPO at May TPO meeting)*
- **ICG Action: Approves proposed approach (Models, methods & assumptions, the project list for modeling, & the schedule for the RCA.) Also ICG update.**

JUNE-JULY: Modeling

- **6/20: HRTPO Transportation modeling completed. Results sent to VDOT Air Quality**
- **7/26: VDOT Emission modeling, conformity determination & draft report completed**

AUGUST: Consultation & HRTPO Approval

- **8/1 or 8/8** *(Per TTAC Item 8-B)*: **TTAC recommends approval of draft RCA & conformity finding**, *subject to no adverse comment in public review or none requiring TTAC review.*
- **8/2 or 8/9** *(Per TTAC Item 8-B)*: **HRTPO initiates 14-day Public Review**
- **8/29**: **TPO approval of draft RCA & conformity finding,** *considering comments (if any) from public consultation & responses*

Mid-October: Federal Approval

- **10/15** ***(Target Date):*** **FHWA/FTA conformity finding (typically in consultation with EPA)**

For ICG approval (per 2005 ICG Procedures):

ICG Updates:

- To add the Hampton Roads Air Quality Committee (HRAQC/LPO) to the ICG, and
- Designate the VDEQ representative on the ICG to also serve as the HRAQC/LPO representative as needed.

  (Attachment 9-A)

Regional Conformity Analysis:

- Proposed Modeling Approach (Models, Methods & Assumptions)(Enclosure 9-A)
  - *Latest Emission Model: MOVES2014a*
  - *Latest Planning Assumptions: 2040 socioeconomic forecasts*
  - *MVEBs, Modeling Years & All Other Inputs: As presented and in Enclosure 9-A*
- Proposed List of Regionally Significant Projects (Enclosure 9-B)
  - *With any amendments to the Plan and/or TIP subject to approvals by the TTAC and/or TPO as needed.*
- Proposed Schedule (Attachment 9-B) *(following TTAC decision on Item 8-B)*

AGENDA ITEM #9: INTERAGENCY CONSULTATION GROUP (ICG) MEETING
Chris Voigt, VDOT

The Hampton Roads area is one of many across the nation that was affected by a February 16, 2018 court decision[1] that reinstated federal transportation conformity rule (40 CFR Parts 51 & 93) requirements that had previously been eliminated by the revocation by the US Environmental Protection Agency (EPA) in 2015 of the 1997 National Ambient Air Quality Standard (NAAQS) for ozone. As a result, and following US Department of Transportation guidance dated April 23, 2018, a Regional Conformity Analysis (RCA) is being initiated for the 2040 LRTP and FY 2018-2021 TIP and associated amendments.

The federal transportation conformity rule (40 CFR 93.105) requires inter-agency consultation to be conducted on the proposed models, methods and assumptions for the RCA. An Inter-Agency Consultation Group (ICG) was established circa 2001 for Hampton Roads for this purpose. The ICG is comprised of:

- Member jurisdictions of the HRTPO that were part of the area previously designated by EPA as maintenance for ozone;
- Representatives of various regional, state, and federal agencies, including the EPA, Federal Highway Administration (FHWA), Federal Transit Administration (FTA), and Virginia Department of Environmental Quality (DEQ); and,
- Per requirements previously established by the DEQ, a representative of the Hampton Roads Air Quality Committee (HRAQC), for which the DEQ representative is proposed to serve as proxy.

This agenda item serves as the ICG meeting for the purpose of meeting conformity rule (and ICG) requirements for inter-agency consultation on the proposed models, methods, and assumptions (including the list of regionally significant projects for the 2040 LRTP and FY 2018-2021 TIP) and the proposed schedule for the RCA, as well as updates to ICG membership. A representative from the Virginia Department of Transportation (VDOT) will provide an overview of the proposed approach to the RCA, with approval requested from the ICG.

Mr. Chris Voigt, VDOT Senior Environmental Engineer, will brief the TTAC on this item.

Attachment 9-A: Draft ICG Membership Update
Attachment 9-B: Draft Conformity Schedule Options subject to Recommended Action 8-B under Agenda Item 8

Enclosure 9-A: *Draft Methodology for the Conformity Analysis*
Enclosure 9-B: *Draft List of Regionally Significant Projects for Conformity for the 2040 LRTP and FY 2018-2021 TIP*

[1] https://www.cadc.uscourts.gov/internet/opinions.nsf/217B6778AE3EC89C8525823600532AE0/$file/15-1115-1718293.pdf

RECOMMENDED INTER-AGENCY COUNSULTATION GROUP (ICG) ACTION:

ICG approval of:

- ICG Updates:
  - Designate the VDEQ representative to serve as the Hampton Roads Air Quality Committee (HRAQC/LPO) representative as needed (Attachment 9-A)

- Regional Conformity Analysis (RCA):
  - Draft Modeling Approach:
    - Models, Methods, and Assumptions (Enclosure 9-A)
      - *Latest Emission Model: MOVES2014a*
      - *Latest Planning Assumptions: 2040 socioeconomic forecasts*
      - *MVEBs, Modeling Years, and All Other Inputs: As presented and in Enclosure 9-A*

  - Draft List of Regionally Significant Projects for Conformity (Enclosure 9-B)
    - *With any amendments to the LRTP and/or TIP subject to approvals by the TTAC and/or HRTPO Board as needed.*

  - Draft Schedule (Attachment 9-B)

Hampton Roads Interagency Consultation Group

As of May 29, 2018

Agency	*Member*	*Alternate*
City/County		
City of Chesapeake	Earl Sorey	Steve Froncillo
City of Hampton	John Yorks	Michael Hayes
City of Newport News	Jacqueline Kassel	Bridjette Parker
City of Norfolk	Jeffrey Raliski	
City of Poquoson	Dannan O'Connell	Debbie Vest
City of Portsmouth	James Wright	
City of Suffolk	Robert Lewis	Sherry Earley
City of Virginia Beach	Brian Solis	
City of Williamsburg	Carolyn Murphy	Aaron Small
Gloucester County	Carol Rizzio	Anne Ducey-Ortiz
Isle of Wight County	Richard Rudnicki	
James City County	Paul Holt	Tammy Rosario
York County	Timothy Cross	
Regional		
Hampton Roads Transportation Planning Organization	Dale Stith	Theresa Brooks
Hampton Roads Transit	Jamie Jackson	Keisha Branch
Williamsburg Area Transit Authority	Josh Moore	Barbara Creel
State		
Virginia Dept. of Environmental Quality*	Sonya Lewis-Cheatham	
Virginia Dept. of Rail & Public Transportation	Jennifer DeBruhl	Chris Arabia
Virginia Dept. of Transportation – C/O Environmental	Jim Ponticello	Christopher Voigt
Virginia Dept. of Transportation – C/O Planning	Peng Xiao	
Federal		
Environmental Protection Agency	Gregory Becoat	
Federal Highway Administration	Ivan Rucker	
Federal Transit Administration	Melissa McGill	
Non-Voting		
US Navy	Rhonda Murray	

** The VDEQ representative also serves as the HRAQC/LPO representative as needed.*

Regional Conformity Analysis (RCA) Schedule (Revised 5/30/2018)
Hampton Roads 2040 LRTP & FY 18-21 TIP

Month	Task
PROJECT LIST DEVELOPMENT	
May 2018	• **TPO & District staff preparation of the regionally significant project list for the 2040 LRTP & FY 18-21 TIP for the RCA.**
CONFORMITY ANALYSIS & APPROVALS	
June	• **6th: TTAC with Interagency Consultation Group (ICG) Agenda Item** • **TTAC Action:** - **Approval of the regionally significant project list for the 2040 LRTP & TIP for use in the RCA** *(authority delegated from TPO at May TPO meeting).* *PROJECT LIST FOR MODELING FINALIZED* • *ANY CHANGES MADE ARE CONDITIONAL ON SUBSEQUENT TTAC/TPO APPROVAL WITHOUT FURTHER CHANGE.* • *ANY FUTURE CHANGES MAY REQUIRE RESTARTING THE CONFORMITY PROCESS.* - **ICG Action: Approval of ICG membership update (HRAQC representative), and the methodology, project list and schedule for the RCA.** • **20th: Transportation network modeling completed & results transmitted to VDOT Air Quality.** o *VDOT initiates emission modeling and update of associated draft conformity analysis report text.*
July	• **20th: Draft conformity analysis completed.** Emission modeling, conformity determination & draft report. • *23rd–24th: VDOT/VDEQ/HRTPO staff review of draft conformity analysis.* • *25th: Draft conformity analysis & attachments transmitted to HRTPO for the TTAC meeting agenda.*
August	• **1st: TTAC reviews & recommends approval of draft conformity analysis & finding, subject to receipt of no adverse comment in public review or none requiring TTAC review.** • **2nd: HRTPO Initiation of 14-day Public Review for the draft conformity analysis & finding** • *17th-21st as needed: VDOT/HRTPO staff review and draft response to comments received (if any) in public review, for consideration by the HRTPO.* • **29th: TPO approval, considering comments (if any) from public consultation and responses** *Next Day:* • *TPO approval letter issued and signed copy emailed to VDOT.* • *VDOT emails the Final Conformity Analysis with the TPO Letter to FHWA Division Office to initiate the federal review and approval process.* • *VDOT sends Final Report with TPO approval letter to printing.* *Federal review period (typically 45 days) begins upon receipt of the final report by email by FHWA Division Office, which coordinates the review with FTA and consults with EPA.*
September	• 12th: *Target date for VDOT to transmit print copies of the Final Conformity Analysis and TPO Letter to FHWA for their records.*
October	• **15th: TARGET DATE for US DOT Finding of Conformity (*letter from FHWA*)**

Regional Conformity Analysis (RCA) Schedule (Revised 5/30/2018)
Hampton Roads 2040 LRTP & FY 18-21 TIP

Month	Task
PROJECT LIST DEVELOPMENT	
May 2018	• **TPO & District staff preparation of the regionally significant project list for the 2040 LRTP & FY 18-21 TIP for the RCA**.
CONFORMITY ANALYSIS & APPROVALS	
June	• **6th: TTAC with Interagency Consultation Group (ICG) Agenda Item** • **TTAC Action:** - **Approval of the regionally significant project list for the 2040 LRTP & TIP for use in the RCA** *(authority delegated from TPO at May TPO meeting).* *PROJECT LIST FOR MODELING FINALIZED* • *ANY CHANGES MADE ARE CONDITIONAL ON SUBSEQUENT TTAC/TPO APPROVAL WITHOUT FURTHER CHANGE.* • *ANY FUTURE CHANGES MAY REQUIRE RESTARTING THE CONFORMITY PROCESS.* - **ICG Action: Approval of ICG membership update (HRAQC representative), and the methodology, project list and schedule for the RCA.** • **20th: Transportation network modeling completed & results transmitted to VDOT Air Quality.** o *VDOT initiates emission modeling and update of associated draft conformity analysis report text.*
July	• **20th: Draft conformity analysis completed.** Emission modeling, conformity determination & draft report. • *30th-31st: VDOT/VDEQ/HRTPO staff review of draft conformity analysis..*
August	• *1st: Draft Conformity Analysis & attachments transmitted to HRTPO for the TTAC meeting agenda.* • **8th: TTAC reviews & recommends approval of draft conformity analysis & finding, subject to receipt of no adverse comment in public review or none requiring TTAC review.** • **9th: HRTPO Initiation of 14-day Public Review for the draft conformity analysis & finding** • *27th-28th as needed: VDOT/HRTPO staff review and draft response to comments received (if any) in public review, for consideration by the HRTPO.* • **29th: TPO approval, considering comments (if any) from public consultation and responses** *Next Day:* • *TPO approval letter issued and signed copy emailed to VDOT.* • *VDOT emails the Final Conformity Analysis with the TPO Letter to FHWA Division Office to initiate the federal review and approval process.* • *VDOT sends Final Report with TPO approval letter to printing.* *Federal review period (typically 45 days) begins upon receipt of the final report by email by FHWA Division Office, which coordinates the review with FTA and consults with EPA.*
September	• 12th: *Target date for VDOT to transmit print copies of the Final Conformity Analysis and TPO Letter to FHWA for their records.*
October	• **15th: TARGET DATE for US DOT Finding of Conformity (*letter from FHWA*)**

2. Modeling

A review of the modeling methodology and assumptions applied in the conformity analysis is presented in this chapter, beginning with an overview of the general approach and the determination of the analysis years and motor vehicle emission budgets applicable for Hampton Roads. Then, in turn, reviews of the key input data and specific assumptions applied in each step of the modeling process (transportation modeling, emission factor modeling, and emission modeling) are presented.

2.1 General Approach

Emissions are generally calculated as the product of vehicle activity and an emission factor corresponding to that vehicle class and activity, with the latter typically expressed in units of grams per mile (effectively, grams of pollutant emitted per vehicle-mile-traveled) consistent with federal new vehicle exhaust emission standards that are expressed on that basis. Estimates for regional total emissions, therefore, generally are generated as the product of VMT (by speed, roadway class, vehicle class etc.) and corresponding emission factors.

Three separate models are typically applied in the development of the regional emission forecasts for conformity analyses:

1) the HRTPO regional travel demand forecasting model,
2) the latest EPA-approved model (MOVES) to generate emission forecasts, and
3) the Department database model (a pre-processor) to prepare inputs to the EPA MOVES model for estimating emissions for both the regional network as well as off-network facilities (i.e., local roads).

Exhibit 2-1 below presents the overall process. First, forecasts for travel demand for each year being modeled in the conformity analysis are developed. For the regional network, key inputs include the latest available socioeconomic forecasts and project lists. The latter are applied to update the regional transportation networks as appropriate for changes to the Plan and Program. The resulting regional transportation networks include all interstates, freeways, expressways, principal arterials, and minor arterials that are or will be open to traffic by the forecast year to be modeled for the conformity analysis. Separate networks are developed for each forecast year to be modeled for the conformity analysis. The Department database model or pre-processor is then applied to generate input data as needed for the next step in the modeling process, namely emission modeling, for both the regional network as well as off-network facilities. The Department database model is based upon transportation engineering methods presented in the 2000 Highway Capacity Manual (HCM) and National Cooperative Highway Research Program (NCHRP) Report 387.

Emission estimates are generated using the current version of the EPA emission model, which at the time of this analysis is MOVES2014a. Key region-specific inputs include the travel-related data generated in the first step, as well as vehicle age distributions, fuel quality data and meteorological data. Emissions for mobile sources operating on military facilities are added as specified in the applicable SIP revision (2007 maintenance plan)[1].

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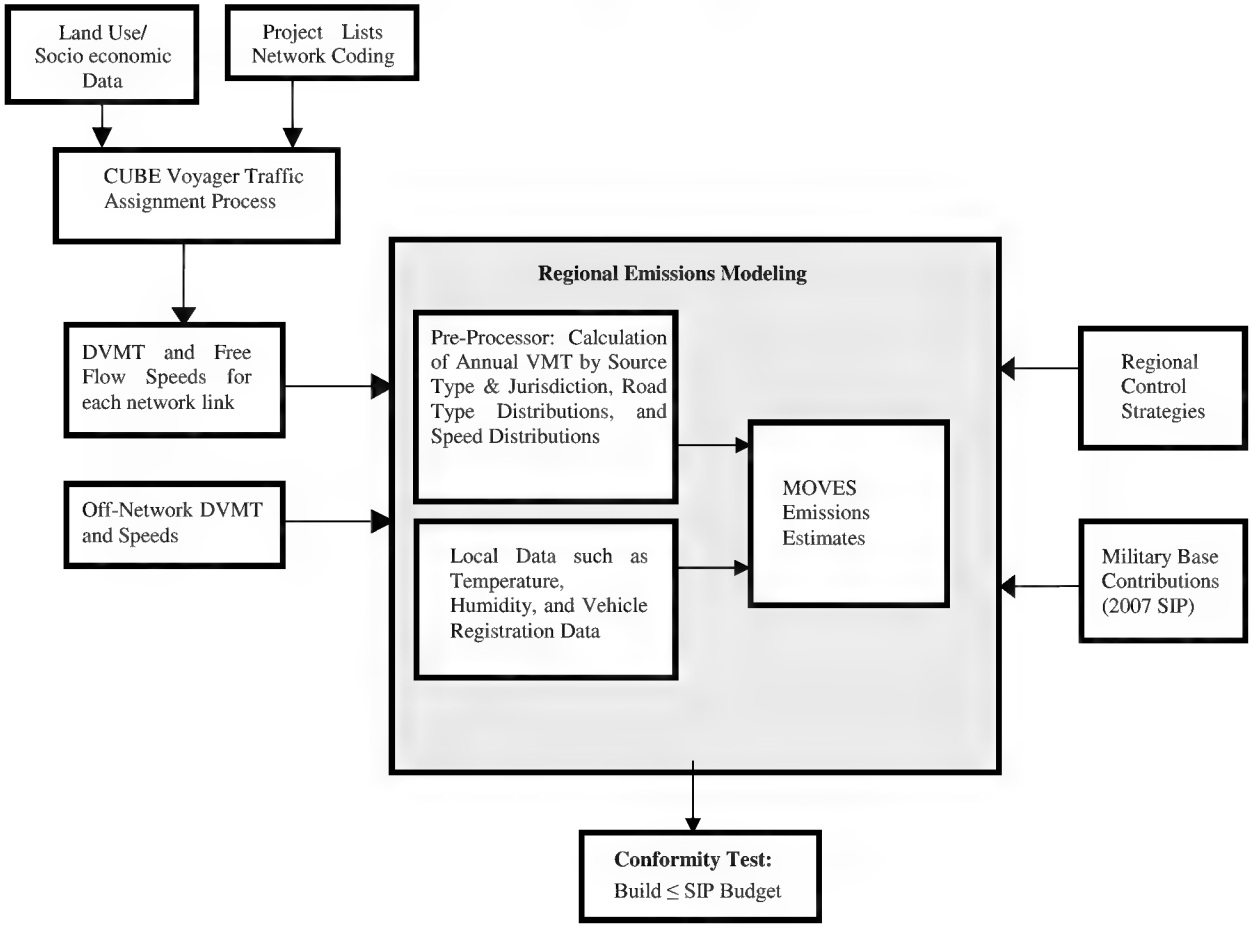
[1] Hampton Roads Maintenance Plan for the 1997 Eight-Hour Ozone Standard, as previous referenced. See US EPA, 72 FR 30490, 40 CFR Parts 52 and 81 [EPA–R03–OAR–2006–0919; FRL–8320–9], *Approval and Promulgation of Air Quality Implementation Plans; Virginia; Re-designation of the Hampton Roads 8-Hour Ozone Nonattainment Area to Attainment and Approval of the Area's Maintenance Plan and 2002 Base-Year Inventory*, Final Rule, effective June 1, 2007.
See: http://edocket.access.gpo.gov/2007/E7-10581.htm.

Exhibit 2-1: Conformity Analysis Process


Land Use/ Socio economic Data
Project Lists Network Coding
CUBE Voyager Traffic Assignment Process
Regional Emissions Modeling
DVMT and Free Flow Speeds for each network link
Off-Network DVMT and Speeds
Pre-Processor: Calculation of Annual VMT by Source Type & Jurisdiction, Road Type Distributions, and Speed Distributions
Local Data such as Temperature, Humidity, and Vehicle Registration Data
MOVES Emissions Estimates
Regional Control Strategies
Military Base Contributions (2007 SIP)
Conformity Test:
Build ≤ SIP Budget

The calculations are repeated for each analysis year as needed. Emission budget tests are then applied for each analysis year to demonstrate conformity. Additional detail for each of the modeling steps is provided below.

2.2 Analysis Years and Budgets

Exhibit 2-2 presents the years selected for modeling for this conformity analysis and the associated motor vehicle emission budgets as specified in the maintenance plan. The budgets listed in the table were originally generated by VDEQ for the maintenance plan using the EPA MOBILE6.2 model, which has been superseded with the issuance by EPA of the MOVES model in 2010; the budgets have not been updated using the current MOVES model.

The years selected for analysis are consistent with the requirements of Section 93.118 of the conformity rule, which requires that years selected for the regional conformity analysis include the years for which budgets are established, the horizon year of the transportation plan, and interim year(s) such that analysis years are no more than ten years apart.

Exhibit 2-2: Analysis Years and Budgets[2]

Year	Regional Emission Budgets *(tons per ozone season weekday)*	
	NOx	VOC
2018*	31.890	27.574
2028	31.890	27.574
2030	31.890	27.574
2040	31.890	27.574

** Budgets specified in 72 FR 30490, effective June 1, 2007.*

Since Section 93.118 the conformity rule requires budgets established "for the most recent prior year" to apply for years for which budgets have not been "specifically established", the 2018 budgets as listed are also applicable for the subsequent years.

For this analysis, the year 2018 was selected as it is a year for which the maintenance plan specifies budgets. The year 2040 was selected as the horizon year for the transportation plan. To meet the interim year requirement (ten-year limit), the years 2028 and 2030 were also selected.

2.3 Transportation Demand Forecasting (CUBE Voyager Model)

The Hampton Roads regional travel demand model represents an advanced practice four-step forecasting model to support air quality analysis and project planning in the Hampton Roads region. The transportation model utilizes a CUBE Voyager platform that includes trip generation, trip distribution, mode split and traffic assignment. The Hampton Roads regional travel demand model covers the Counties of Gloucester, Isle of Wight, James City, and York, as well as the Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Williamsburg, and Virginia Beach. The model satisfies the requirements enumerated in 40 CFR 93.110 as well as the related requirements in 40 CFR 93.122 as summarized below. The model was validated and calibrated for 2009 traffic volumes and land use conditions [40 CFR 93.122(b)(1)(i)][3].

Consistent with the requirements of federal conformity rule, all regionally significant projects in service or open to traffic in the year of analysis are included in the modeling [40 CFR 93.122(a)]. Roadway data input by the user (e.g., road segment length, capacity, number of lanes, and free-flow speeds by facility type) are used to create a representation of the regional transportation system for each analysis year, which includes all regionally significant projects identified for the Plan and TIP. A transportation system network is developed for all motorized modes of travel including single-occupant vehicle, high or multi-occupant vehicle (HOV), bus transit, and light rail transit. Following network development, travel time and cost estimates for all networks modeled are tabulated for use in subsequent model steps.

Trip making activity is estimated in the trip generation and trip distribution steps. Trip generation uses land use information aggregated by traffic analysis zone (TAZ), estimated trip rates, and standard equations to estimate the number of trips that will be generated by and attracted to each TAZ. The TAZ trip data are then used in the trip distribution step that links trip origins with trip destinations to create trip tables, which are

[2] While the budget for 2018 applies for all subsequent modeling years, the year 2018 is only tentatively selected for modeling for this analysis pending EPA guidance.

[3] Documentation relating to the validation and calibration process may be obtained from VDOT Transportation and Mobility Planning.

disaggregated for work and non-work trip purposes. Trips that leave or pass through the Hampton Roads region were also estimated, using observed 2009 traffic counts at major exit points of the region, and expanded based on forecast traffic counts at those locations in future years.

Trip tables from trip distribution along with network-based travel time and cost data [40 CFR 93.122(b)(1)(v, vi)] are input to the mode split step to estimate trip tables by trip purpose and mode. In the mode split step, nested-logit equations are applied to allocate trips between auto and transit modes. Individual trip tables are created for auto and transit modes. Prior to traffic assignment, trip tables are processed to apply standard auto occupancy rates, convert the tables from model-based production-attraction format to standard origin-destination format, and aggregate results.

Finally, in the traffic assignment step, the trip tables are loaded onto the appropriate highway or transit network and the model run to produce forecasts for traffic volumes for each roadway or transit link. Highway assignment utilizes a capacity restraint formula to simulate congestion effects on the roadway system [40 CFR 93.122(b)(1)(iv)]. The model makes route decisions based upon the estimated level of roadway congestion, redirecting trips to less congested routes until equilibrium is achieved (i.e., when shifting trips to alternative routes will no longer realize any time savings).

Output from the highway assignment is a network file that includes the assigned roadway volumes for each roadway link. Transit assignment is based upon best available route and does not have a modeled congestion process. The assigned volumes are applied to generate VMT estimates.

This overall modeling process is applied for each analysis year. Appendix B presents resulting forecasts by jurisdiction. Key inputs to the network model are reviewed below.

2.3.1 Socioeconomic Forecasts

The HRTPO developed the socioeconomic data to be used in the conformity analysis using the Regional Economic Models, Inc. (REMI) econometric model. The REMI model is a conjoined input-output and econometric model widely used by local, state and federal governments, colleges and universities, consulting firms and others for economic forecasting including impact analyses.

Following standard practice for the development of socioeconomic forecasts, the REMI model was applied to develop “control totals” for key parameters such as population and employment for the Hampton Roads area. The HRTPO then sub-allocated the regional control totals generated with the REMI model to the local or jurisdiction level for the Hampton Roads area. The sub-allocations were reviewed by each locality and adjustments were made where appropriate [40CFR93.110; 40CFR93.122(b)(1)(iiii)].

Participants in this process included the Counties of Gloucester, Isle of Wight, James City, and York, as well as the Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Williamsburg, and Virginia Beach. Representatives of these jurisdictions distributed the regional population and employment projections to the TAZs used in the transportation model, covering the LRTP Study Area.

Exhibit 2-3 presents the socioeconomic forecasts underlying the travel demand forecasts developed for this conformity analysis. The forecasts (including interim years and sub-allocations as appropriate) represent the latest projections available and approved for use with the 2040 LRTP [40 CFR 93.110(a,b); 40 CFR 93.122(b)(1)(ii)]. More detailed data are presented in Appendix A.

Exhibit 2-3: Socioeconomic Forecasts*

Year	Hampton Roads Modeling Area			
	Population	Households	Autos	Total Employment
2018	1,733,166	650,101	1,365,329	1,101,591
2028	1,850,806	698,085	1,478,787	1,170,236
2030	1,874,347	707,694	1,501,488	1,183,977
2040	1,992,000	755,700	1,614,900	1,252,600

Source: HRTPO Communication, 5/30/2018

* *The projections for 2040 were adopted by the Hampton Roads TPO in November 2012. The projections for other years were developed by interpolation, by TAZ, between 2009 and 2040, by TPO staff. 2018 is tentatively included pending guidance from EPA.*

2.3.2 Transit Service

Transit operating policies (including fares and service levels) and modeling for transit (ridership) have not changed significantly since the previous conformity determination [40 CFR 93.110(c) and (d)]. Light rail service is included in the modeling networks. Transit service and fares as well as road and bridge tolls are addressed in more detail in supporting documentation for the Plan and associated modeling. While future transit ridership is effectively determined in the course of modeling for the conformity analysis, details on current transit operating policies including fares and service levels may be found on the Hampton Roads Transit (HRT), Williamsburg Area Transportation Authority (WATA), and Suffolk Transit websites[4].

In brief, local transit fares have not changed significantly since the last conformity analysis for either HRT or WATA. Suffolk Transit is a new transit provider that began service since the last conformity analysis.

- For HRT, the current single ticket fare for local bus and the TIDE light rail service is $2.00; for seniors (60 and over) and the disabled, a reduced fare of $1.00 applies. A day pass (the Go Pass) which was introduced in 2008 is $4.50 for a one-day pass. In keeping with the Americans with Disabilities Act (ADA), door-to-door service is also available for Certified Paratransit Users for no fee.
- For WATA, the fare for a one-way trip is $1.50; for seniors (60 and over) and disabled, a reduced fare of $0.75 applies. An all-day pass (for unlimited trips) is also available for a fare of $3.00. In keeping with the ADA, door-to-door service is also available for those unable to use bus at a fare of $3.00 per one-way trip.
- For Suffolk Transit, the fare for a one-way trip is $1.50; for seniors (55 and over) and disabled, a reduced fare of $0.75 applies. An all-day pass (for unlimited trips) is also available for a fare of $3.00. In keeping with the ADA, door-to-door service is also available for those unable to use bus at a fare of $3.00 per one-way trip.

Finally, express bus service modeling includes the "Max" service, with fares currently $4.00 one-way, converted to constant 2009 dollars.

2.3.3 Project Lists & Regional Network Development

The federal conformity rule at 40 CFR 93.122(a) requires that "*General requirements. (1) The regional emissions analysis … for the transportation plan, TIP… must include all regionally significant projects expected in the nonattainment or maintenance area. The analysis shall include FHWA/FTA projects proposed in the transportation plan and TIP*

[4] See https://gohrt.com/, http://gowata.org/ and http://www.suffolkva.us/429/Suffolk-Transit respectively..

and all other regionally significant projects which are disclosed to the MPO as required by Sec. 93.105."

Regionally significant projects are defined in the federal conformity rule and generally include arterials and higher-level facilities (freeways, expressways, interstates) that serve a regional function and are typically coded in the transportation model network for transportation analyses. Minor arterials, collectors, or local streets are usually only coded in the model if they enhance the capability of the traffic model to route trips on the network.

All regionally significant and/or federally funded or approved projects identified in the Plan and Program were incorporated into the respective highway networks for each analysis year for this conformity analysis. The project list for the Plan and TIP was subjected to Interagency Consultation Group review (pursuant to Section 93.105 and the corresponding state regulation), as documented in the chapter on consultation. Each network is a representation of the region's highway system as it is likely to appear by the specified year. Similarly, the transit network for each scenario and analysis year is coded to estimate transit volumes and ridership.

Since regional emission analyses are performed for multiple analysis years as needed for the conformity determination, the transportation networks were coded to include all regionally significant projects specified or included in the Plan and Program and open to traffic in each year modeled. Appendix E presents the list of regionally significant projects for modeling.

Projects were coded in the networks based on the first analysis year in which the project would be open to traffic or operational. For the most part, project opening dates were determined at the District level based upon detailed project information provided by either the localities or the associated VDOT project manager. In cases where that level of detail in scheduling was not available, reasonable assumptions were made. For example, completion dates where otherwise not available were estimated by adding three years to the advertisement date for major projects. Shorter times were allocated as appropriate for the completion of minor projects.

2.3.5 Treatment of Off-Network Facilities (Local and Collector Roads)

Local and collector roadways are not typically coded in regional transportation model networks. In the Hampton Roads CUBE Voyager model, most collector roadways are coded in the regional network; however, local roadways are not (some local streets are included to provide appropriate connectivity in the network). The travel demand model output is also not directly adjusted to account for traffic on local facilities. Instead, traffic for local facilities are addressed in the pre-processor. See Section 2.5 for more information on the adjustments for off-network facilities.

2.3.6 Optional Off-line Analyses

Some transportation projects that have a potentially significant impact on regional air quality cannot be coded into the transportation modeling network. These are categorized as "off-line projects" and are analyzed using a variety of methodologies that include elasticity/pivot-point analysis and the use of traffic engineering principles to estimate their traffic and emission impacts.

Off-line analyses for Hampton Roads would include transit bus replacements, Congestion Mitigation and Air Quality (CMAQ) funded projects, van pools, and park-and-ride lots. However, as these adjustments would be expected to reduce modeled

emissions, they were not needed to demonstrate conformity and were not applied for this analysis.

2.4 Emission Modeling

This section presents the selection of the latest emission model as well as key inputs for that model.

2.4.1 Latest Emission Model

The federal conformity rule at 93.111(a) requires the use of the latest emission model as follows: "*The conformity determination must be based on the latest emission estimation model available.*"[5] At the time of preparation of this analysis, the latest emission model specified by EPA for use in SIP development and conformity applications is the Motor Vehicle Emission Simulator (MOVES)[6]. The latest version of the model is MOVES2014a[7].

2.4.2 MOVES Model Inputs

As noted on the MOVES web page: "*EPA's MOtor Vehicle Emission Simulator (MOVES) is a state-of-the-science emission modeling system that estimates emissions for mobile sources at the national, county, and project level for criteria air pollutants, greenhouse gases, and air toxics.*"[8]

For this analysis, both national default data and region-specific inputs were used with MOVES. Region-specific inputs include meteorological data, emission control programs, and on-road fleet registration and traffic distribution data, which are summarized in turn below. A sample of a run specification file applied in this conformity analysis is provided in Appendix C.

2.4.2.1 Ambient Conditions

The federal conformity rule at 93.122(a)(6) requires that "*The ambient temperatures used for the regional emissions analysis shall be consistent with those used to establish the emissions budget in the applicable implementation plan.…*"[9].

Exhibit 2-4 presents average hourly ambient temperature, hourly relative humidity, and barometric pressure data as presented in the Technical Support Document for the applicable implementation (maintenance) plan. The hourly data for ambient temperature and relative humidity along with the average daily value for barometric pressure were applied in this conformity analysis, consistent with the maintenance plan.

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[5] Federal Conformity Rule, 40 CFR 93.111 Criteria and Procedures: Latest Emissions Model http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.111.htm

[6] EPA MOVES Web Site: https://www.epa.gov/moves

[7] https://www.epa.gov/moves/moves2014a-latest-version-motor-vehicle-emission-simulator-moves

[8] Ibid

[9] Federal Conformity Rule, 40 CFR 93.122, *Procedures for Determining Regional Transportation-Related Emissions*: http://edocket.access.gpo.gov/cfr_2017/julqtr/40cfr93.122.htm

Exhibit 2-4: Ambient Conditions - Ozone Season

Average Hourly Meteorological Data				
Time (EDT)	Temperature (F)	Dew Point (F)	Relative Humidity (%)	Pressure (In)
6:00 AM	71.77	66.4	83.9	30.017
7:00 AM	75.2	67.7	78.1	30.029
8:00 AM	77.8	68.09	72.7	30.033
9:00 AM	81.07	67.22	63	30.034
10:00 AM	83.04	66.91	58.5	30.034
11:00 AM	84.34	65.99	54.5	30.027
12:00 PM	85.79	65.04	50	30.019
1:00 PM	86.59	64.81	48.9	30.009
2:00 PM	87.4	64.09	46.6	29.996
3:00 PM	87.27	63.82	46	29.985
4:00 PM	87.6	63.22	44.7	29.978
5:00 PM	87.01	63.86	46.7	29.974
6:00 PM	85.51	63.99	49.1	29.973
7:00 PM	83.21	65.42	55.9	29.982
8:00 PM	79.39	68.16	69	29.99
9:00 PM	77.9	68.5	73.3	30.004
10:00 PM	77.02	68.08	74.5	30.006
11:00 PM	75.38	67.87	78.1	30.007
12:00 AM	73.31	66.4	79.8	30.006
1:00 AM	72.91	66.31	80.7	30.004
2:00 AM	72.71	66.49	81.7	29.997
3:00 AM	71.9	63.8	78.1	29.995
4:00 AM	71.2	65.5	82.8	29.995
5:00 AM	70.73	65.49	84.3	30.006
	Avg Min T	70.51		
	Avg Max T	88.01		
	Avg Pres	30.004		

Source: VDEQ, "Technical Support Document for the Re-designation Request and Maintenance Plan for Hampton Roads 8-Hour Ozone Nonattainment Area, Final", as approved June 1, 2007, 72 FR 30490. See Table 4.1-2 on age 64. Reproduced with permission.

2.4.2.2 Emission Control Programs

Exhibit 2-5 lists emission control programs in effect for the Hampton Roads area. The locality-specific emission model input parameters are consistent with the approved maintenance SIP and based on the latest planning assumptions.

Exhibit 2-5: Emission Control Programs

Programs	2018*	2028	2030	2040
Reformulated Gasoline**	Yes	Yes	Yes	Yes
RVP (PSI): • All jurisdictions but Gloucester and Isle of Wight • Gloucester and Isle of Wight	 6.8 8.4	 6.8 8.4	 6.8 8.4	 6.8 8.4
2007 HDDV Program	Yes	Yes	Yes	Yes
NLEV Early Implementation	Yes	Yes	Yes	Yes
Tier 2 Standards	Yes	Yes	Yes	Yes
Tier 3 Standards***	Yes	Yes	Yes	Yes

** 2018 tentatively selected for modeling for this analysis pending EPA guidance.*
***Except for the counties of Gloucester and Isle of Wight, which use conventional gasoline.*
**** Tier 3 standards are in addition to the requirements of the Maintenance Plan.*

Emission control programs for Hampton Roads as modeled for this analysis include:

- Reformulated Gasoline (RFG), and Gasoline Reid Vapor Pressure (RVP): RFG was modeled for all jurisdictions within the maintenance area with the exception of the Counties of Gloucester and Isle of Wight, which use conventional gasoline. RFG benefits were modeled for all analysis years after 1996, consistent with Virginia regulations requiring RFG and the Maintenance Plan.

- 2007 Heavy Duty Diesel Vehicle (HDDV): The 2007 Heavy Duty Diesel Vehicle (HDDV) program including the implementation of ultra-low sulfur diesel was included in the generation of emission factors for the conformity analysis. Excerpted from the 2007 regulatory announcement[10]:

  "New Standards for Heavy-Duty Highway Engines and Vehicles

  [EPA is] finalizing a PM emissions standard for new heavy-duty engines of 0.01 grams per brake-horsepower-hour (g/bhp-hr), to take full effect for diesels in the 2007 model year. [EPA is] also finalizing standards for NOx and non-methane hydrocarbons (NMHC) of 0.20 g/bhp-hr and 0.14 g/bhp-hr, respectively. These NOx and NMHC standards will be phased in together between 2007 and 2010, for diesel engines. The phase-in will be on a percent of-sales basis: 50 percent from 2007 to 2009 and 100 percent in 2010.

  Gasoline engines will be subject to these standards based on a phase in requiring 50 percent compliance in the 2008 model year and 100 percent compliance in the 2009 model year.

  The program includes flexibility provisions to facilitate the transition to the new standards and to encourage the early introduction of clean technologies, and adjustments to various testing and compliance requirements to address differences between the new technologies and existing engine based technologies.

  New Standards for Diesel Fuel

  Refiners will be required to start producing diesel fuel for use in highway vehicles with a sulfur content of no more than 15 parts per million (ppm), beginning June 1, 2006. At the terminal level, highway diesel fuel sold as low sulfur fuel will be required to meet the 15 ppm sulfur standard as of July 15, 2006. For retail stations and fleets, highway diesel fuel sold as low sulfur fuel must meet the 15 ppm sulfur standard by September 1, 2006.

  This program includes a combination of flexibilities available to refiners to ensure a smooth transition to low sulfur highway diesel fuel."

- National Low Emission Vehicle (NLEV) Program Early Implementation: Early implementation of the NLEV program was included in the modeling for the conformity analysis. The NLEV program, finalized by EPA in March 1998, implemented cleaner light-duty gasoline vehicles beginning in model year 1999 throughout Virginia.

- Tier 2 Vehicle Emission Standards: EPA Tier 2 vehicle emission standards implementation beginning with the 2004 model year was specified for the modeling for the conformity analysis. Gasoline sulfur levels as required for the Tier 2 standards were incorporated into the modeling. Excerpted from the supplementary information included with the final Tier 2 rule[11]:

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[10] US EPA, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, EPA420-F-00-057, Office of Transportation and Air Quality, December 2000.

[11] US EPA, 65 FR 6698, 40 CFR Parts 80, 85, and 86, Control of Air Pollution From New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements; Final Rule, February 10, 2000. Published in four sections spanning pages 6697-6870.

"Highlights of the Tier2/Gasoline Sulfur Program

For cars, and light trucks, and larger passenger vehicles, the program will—

- *Starting in 2004, through a phase in, apply for the first time the same set of emission standards covering passenger cars, light trucks, and large SUVs and passenger vehicles. …*
- *Introduce a new category of vehicles, "medium-duty passenger vehicles," thus bringing larger passenger vans and SUVs into the Tier 2 program.*
- *During the phase-in, apply interim fleet emission average standards that match or are more stringent than current federal and California "LEV I" (Low-Emission Vehicle, Phase I) standards.*
- *Apply the same standards to vehicles operated on any fuel.*
- *Allow auto manufacturers to comply with the very stringent new standards in a flexible way while ensuring that the needed environmental benefits occur.*
- *Build on the recent technology improvements resulting from the successful National Low-Emission Vehicles (NLEV) program and improve the performance of these vehicles through lower sulfur gasoline.*
- *Set more stringent particulate matter standards.*
- *Set more stringent evaporative emission standards.*

For commercial gasoline, the program will—

- *Significantly reduce average gasoline sulfur levels nationwide as early as 2000, fully phased-in in 2006. Refiners will generally add refining equipment to remove sulfur in their refining processes. Importers of gasoline will be required to import and market only gasoline meeting the sulfur limits.*

  …
- *Enable the new Tier 2 vehicles to meet the emission standards by greatly reducing the degradation of vehicle emission control performance from sulfur in gasoline. Lower sulfur gasoline also appears to be necessary for the introduction of advanced technologies that promise higher fuel economy but are very susceptible to sulfur poisoning (for example, gasoline direct injection engines).*
- *Reduce emissions from NLEV vehicles and other vehicles already on the road."*

- Tier 3 Vehicle Emission Standards: Excerpted from the March 2014 EPA fact sheet[12]:

  "EPA Sets Tier 3 Motor Vehicle Emission and Fuel Standards

  The U.S. Environmental Protection Agency (EPA) is finalizing an important rule designed to reduce air pollution from passenger cars and trucks. Starting in 2017, Tier 3 sets new vehicle emissions standards and lowers the sulfur content of gasoline, considering the vehicle and its fuel as an integrated system.

  The Tier 3 vehicle standards reduce both tailpipe and evaporative emissions from passenger cars, light-duty trucks, medium-duty passenger vehicles, and some heavy-duty vehicles.

  The Tier 3 gasoline sulfur standard will make emission control systems more effective for both existing and new vehicles, and will enable more stringent vehicle emissions standards. Removing sulfur allows the vehicle's catalyst to work more efficiently. Lower sulfur gasoline also facilitates the development of some lower-cost technologies to improve fuel economy and reduce green- house gas (GHG) emissions, which reduces gasoline consumption and saves consumers money.

  The tailpipe standards include different phase-in schedules that vary by vehicle class but generally phase in between model years 2017 and 2025. In addition to the gradual phase-in schedules, other flexibilities include credits for early compliance and the ability to offset some higher-emitting vehicles with extra-clean models."

Consistent with the modeling presented in the Technical Support Document for the

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[12] https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-control-air-pollution-motor-vehicles-tier-3
Direct link: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100HVZV.PDF?Dockey=P100HVZV.PDF

maintenance plan, inspection and maintenance or anti-tampering programs were not included in the modeling for this analysis.

2.4.2.3 Fleet Registration (Age) Data

Vehicle registration (age) distributions by vehicle class are input to the emission model for each jurisdiction in the region. Exhibit 2-6 presents a sample of vehicle registration distribution data for one jurisdiction (City of Virginia Beach). The registration distribution data were developed by the VDEQ in support of the preparation of the federally-required 2014 Periodic Emission Inventory ("2014 PEI"). The data were derived from detailed vehicle identification number (VIN) data for all jurisdictions in the Commonwealth.

2.5 Pre-Processing

Adjustments made in pre-processing include the following: i) HPMS adjustment factor for VMT, ii) congested speeds, and iii) seasonal traffic levels. These are reviewed in turn below.

2.5.1 HPMS Adjustment Factor

The conformity rule at 40 CFR 93.122(b)(3) specifies that factors determined from base year travel demand model comparisons to Highway Performance Monitoring Systems (HPMS) data may be applied to adjust future VMT forecasts. Such a comparison was conducted for the 2009 base year. The results indicate that the travel demand model overestimates VMT compared to HPMS data, i.e., the HPMS VMT data were on average 89.6% of the modeled daily VMT for 2009, not accounting for the conversion of HPMS average day VMT to an average week day (as used by the travel demand model). Both of these adjustments will be reviewed in the course of development of new traffic data and forecasts for this conformity analysis and appropriate values applied.

Exhibit 2-6: 2014 Sample Vehicle Registration Distributions – Virginia Beach

Age*	EPA MOVES Model Source (Vehicle) Type												
	11	21	31	32	41	42	43	51	52	53	54	61	62
0	0.0070	0.1374	0.0293	0.4460	0.0000	0.0000	0.0288	0.0417	0.1426	0.0358	0.0175	0.0228	0.0730
1	0.0472	0.1011	0.0504	0.1390	0.0185	0.0185	0.0170	0.0000	0.0395	0.0418	0.0297	0.0140	0.0558
2	0.0524	0.0502	0.0467	0.0526	0.0463	0.0463	0.0957	0.0417	0.1723	0.0555	0.0210	0.0088	0.0558
3	0.0442	0.0364	0.0507	0.0296	0.0000	0.0000	0.0275	0.1250	0.0573	0.0424	0.0227	0.0018	0.0298
4	0.0364	0.0417	0.0466	0.0139	0.0000	0.0000	0.0183	0.2500	0.0057	0.0212	0.0035	0.0123	0.0246
5	0.0753	0.0371	0.0321	0.0125	0.0185	0.0185	0.1298	0.0000	0.0241	0.0266	0.0122	0.0298	0.0325
6	0.0806	0.0479	0.0572	0.0226	0.0185	0.0185	0.0301	0.0833	0.0562	0.0573	0.0315	0.0228	0.0225
7	0.1010	0.0543	0.0661	0.0308	0.0741	0.0741	0.1350	0.0417	0.1847	0.0634	0.0507	0.0772	0.0843
8	0.0884	0.0510	0.0660	0.0270	0.0556	0.0556	0.0092	0.1250	0.1219	0.0716	0.0699	0.0825	0.0602
9	0.0715	0.0484	0.0731	0.0246	0.0278	0.0278	0.0813	0.0833	0.0314	0.0607	0.0490	0.0965	0.0578
10	0.0567	0.0468	0.0769	0.0257	0.1019	0.1019	0.1468	0.0000	0.0208	0.0469	0.0769	0.0632	0.0323
11	0.0657	0.0474	0.0635	0.0245	0.0741	0.0741	0.0000	0.0000	0.0152	0.0417	0.0472	0.0263	0.0315
12	0.0481	0.0414	0.0581	0.0213	0.0278	0.0278	0.0459	0.0417	0.0135	0.0397	0.0455	0.0211	0.0222
13	0.0368	0.0369	0.0470	0.0179	0.0648	0.0648	0.0773	0.0000	0.0174	0.0470	0.0280	0.0439	0.0370
14	0.0279	0.0365	0.0454	0.0180	0.0185	0.0185	0.0852	0.0417	0.0173	0.0504	0.0437	0.0877	0.0558
15	0.0226	0.0279	0.0376	0.0150	0.0741	0.0741	0.0052	0.0000	0.0156	0.0457	0.0752	0.0737	0.0450
16	0.0156	0.0232	0.0275	0.0109	0.0833	0.0833	0.0066	0.0417	0.0096	0.0249	0.0507	0.0491	0.0341
17	0.0123	0.0207	0.0248	0.0099	0.0370	0.0370	0.0039	0.0000	0.0083	0.0281	0.0769	0.0404	0.0270
18	0.0127	0.0168	0.0181	0.0080	0.0093	0.0093	0.0066	0.0000	0.0059	0.0215	0.0297	0.0404	0.0296
19	0.0084	0.0164	0.0162	0.0081	0.0556	0.0556	0.0118	0.0000	0.0078	0.0271	0.0385	0.0526	0.0327
20	0.0079	0.0127	0.0134	0.0076	0.0093	0.0093	0.0039	0.0417	0.0057	0.0183	0.0280	0.0228	0.0251
21	0.0065	0.0101	0.0088	0.0050	0.0185	0.0185	0.0026	0.0000	0.0033	0.0146	0.0227	0.0263	0.0196
22	0.0050	0.0081	0.0065	0.0033	0.0000	0.0000	0.0066	0.0417	0.0027	0.0117	0.0122	0.0105	0.0135
23	0.0035	0.0065	0.0048	0.0027	0.0093	0.0093	0.0052	0.0000	0.0021	0.0125	0.0122	0.0070	0.0125
24	0.0035	0.0053	0.0047	0.0025	0.0093	0.0093	0.0039	0.0000	0.0033	0.0147	0.0210	0.0123	0.0147
25	0.0049	0.0042	0.0051	0.0031	0.0000	0.0000	0.0000	0.0000	0.0037	0.0132	0.0262	0.0123	0.0153
26	0.0043	0.0036	0.0043	0.0026	0.0185	0.0185	0.0013	0.0000	0.0024	0.0123	0.0175	0.0158	0.0130
27	0.0050	0.0036	0.0035	0.0024	0.0463	0.0463	0.0013	0.0000	0.0027	0.0103	0.0140	0.0070	0.0110
28	0.0068	0.0027	0.0030	0.0027	0.0278	0.0278	0.0026	0.0000	0.0019	0.0102	0.0070	0.0070	0.0089
29	0.0047	0.0027	0.0022	0.0019	0.0370	0.0370	0.0066	0.0000	0.0018	0.0090	0.0087	0.0070	0.0084
30	0.0372	0.0210	0.0106	0.0083	0.0185	0.0185	0.0039	0.0000	0.0030	0.0236	0.0105	0.0053	0.0146

Souce: VDEQ Data from the 2014 National Emission inventory (NEI2)

** Vehicle age = Calendar year minus model year, plus one.*

2.5.2 Congested Speed Calculation

Congested speeds are estimated using standard Bureau of Public Roads (BPR) formulae that are based upon free flow speeds, volumes and capacity[13]. Two forms of the BPR equation are applied:

1) for non-signalized roadway segments:

$$speed\ \ for\ unsignalized\ \ facilities = \frac{corridor\ \ free\ \ flow\ speed}{1+0.2(volume/capacity)^{10}}$$

2) for signalized roadway segments, defined as facilities on which traffic signals are spaced two miles or less apart:

$$speed\ \ for\ signalized\ \ facilities = \frac{corridor\ \ free\ \ flow\ speed}{1+0.05(volume/capacity)^{10}}$$

2.5.3 Temporal Adjustments to Traffic

Exhibit 2-7, 2-8 and 2-9 present respectively the data used for the month, day and hour

[13] Generally, free flow speed is taken here as the speed at which a vehicle on the roadway segment would travel given no conflict with other traffic, i.e., no congestion. As traffic volumes increase and the carrying capacity of the roadway is reached (i.e. congestion increases), average speeds would be expected to be reduced. The free flow speeds used are consistent with those used in the regional network model.

VMT fractions for MOVES emission modeling. Typically, MOVES default hourly distributions are used, but more recently developed local hourly data as presented in Exhibit 2-9 will be reviewed and applied if feasible in this analysis. Since the analysis is for the ozone season, the data selected are those that best represent typical ozone season values.

EXHIBIT 2-7: Fraction of 2014 Total VMT for an Average 31-Day Month in the Summer Ozone Season (May-September), By HPMS Vehicle Class

HPMS Vehicle Class		Fraction
10	Motorcycles	0.12409
25	Passenger Cars and Other 2-Axle / 4-Tire	0.08961
40	Buses	0.08483
50	Single Unit Trucks	0.08681
60	Combination Trucks	0.08659

Source: VDOT, "Traffic Data for the 2014 Periodic Emissions Inventory. Air Quality Planning Areas: Fredericksburg, Hampton Roads, Northern Virginia, Richmond, Roanoke & Winchester", November 2015.

EXHIBIT 2-8: Average Weekday VMT Fractions by MOVES Road Type and HPMS Vehicle Class for the Summer Ozone Season (May-September)

HPMS Vehicle Class	MOVES Road Type			
	2 - Rural Restricted	3- Rural Unrestricted	4 - Urban Restricted	5 - Urban Unrestricted
10	0.61283	0.47855	0.66680	0.61381
25	0.66086	0.66848	0.72969	0.72580
40	0.86157	0.88787	0.87024	0.87513
50	0.87442	0.89343	0.89036	0.87956
60	0.89384	0.89601	0.90459	0.90183

** Five-day averages. The corresponding weekend fractions may be obtained as one minus the weekday fraction.*

Source: VDOT, "Traffic Data for the 2014 Periodic Emissions Inventory. Air Quality Planning Areas: Fredericksburg, Hampton Roads, Northern Virginia, Richmond, Roanoke & Winchester", November 2015.

Exhibit 2-9: Sample VMT Fractions by Hour for a Weekday in July, for MOVES Source Type 25 (Passenger Cars and Other 2-Axle/4-Tire)

Hour*	MOVES hourVMTFraction			
	2 - Rural Restricted	3- Rural Unrestricted	4 - Urban Restricted	5 - Urban Unrestricted
0	0.01101	0.00598	0.01003	0.00750
1	0.00613	0.00341	0.00546	0.00454
2	0.00440	0.00270	0.00427	0.00323
3	0.00482	0.00385	0.00468	0.00348
4	0.00817	0.01081	0.01020	0.00762
5	0.02220	0.02726	0.02826	0.01933
6	0.04477	0.04996	0.05443	0.03816
7	0.05616	0.05528	0.06548	0.05330
8	0.05651	0.05043	0.05710	0.05402
9	0.05569	0.04772	0.04987	0.05121
10	0.06021	0.05210	0.04957	0.05379
11	0.06138	0.05426	0.05183	0.05909
12	0.06089	0.05844	0.05429	0.06410
13	0.06319	0.06092	0.05663	0.06363
14	0.06565	0.06667	0.06320	0.06694
15	0.06748	0.07611	0.07184	0.07363
16	0.06890	0.08890	0.07436	0.08008
17	0.06731	0.08717	0.07235	0.08016
18	0.05534	0.06480	0.05923	0.06333
19	0.04439	0.04472	0.04447	0.04829
20	0.03654	0.03291	0.03677	0.03892
21	0.03207	0.02584	0.03227	0.03042
22	0.02825	0.01820	0.02557	0.02122
23	0.01853	0.01156	0.01785	0.01401

** Hour 0 starts at midnight, hour 1 at 1 a.m., and so on.*

Source: VDOT, "Traffic Data for the 2014 Periodic Emissions Inventory. Air Quality Planning Areas: Fredericksburg, Hampton Roads, Northern Virginia, Richmond, Roanoke & Winchester", November 2015.

2.5.3 Adjustments for Off-Network Facilities (Local and Collector Roads)

The federal conformity rule at 40 CFR 93.122(a) requires that "*…Projects which are not regionally significant are not required to be explicitly modeled, but vehicle miles traveled (VMT) from such projects must be estimated in accordance with reasonable professional practice.*"

All regionally significant projects are included in the network modeling as summarized previously. However local roadways are not typically coded in regional transportation model networks and are not coded in the regional network model developed for Hampton Roads[14].

[14] Collectors may also be included in this off-network calculation, if needed depending on their coverage in

The pre-processor was therefore designed to generate estimates for VMT for these minor facilities, projecting future traffic volumes using traffic count data for a base year and average annual growth rates applicable through the horizon year of the LRTP for the region. Speeds are taken from the VDOT Statewide Planning System (SPS) database. The base year VMT data for local roads were obtained for 2016 from the VDOT TMS/HPMS database. Tabulations of the VMT forecasts generated are presented in Appendix B.

Exhibit 2-10 presents forecast annual average growth rates for local road VMT for the Hampton Roads area[15]. As an approximation, the rates were taken as equivalent to the annual average growth rates reported with the socioeconomic data for auto ownership in Hampton Roads.

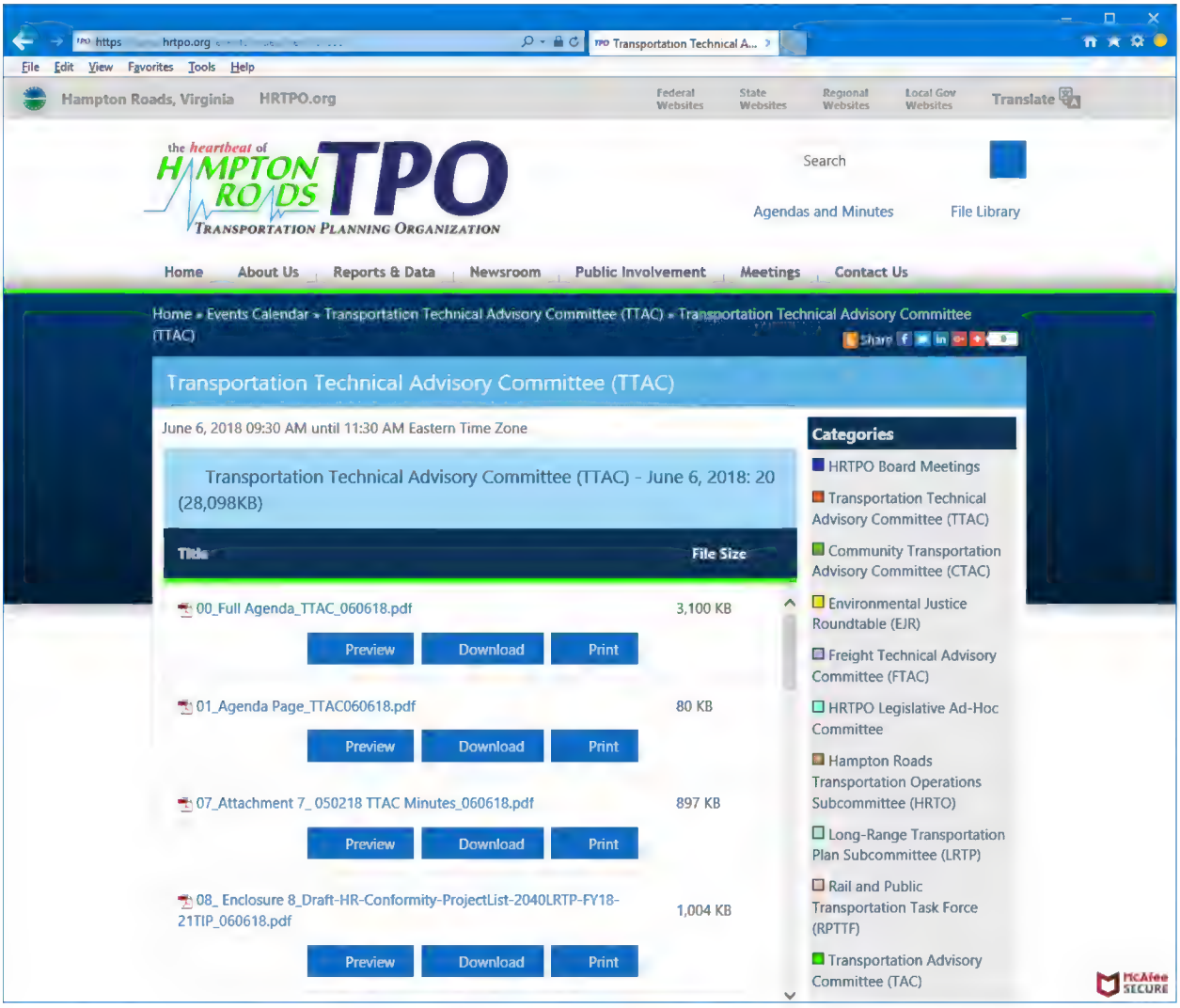
Exhibit 2-10: Annual Average Growth Rates for Local Road VMT

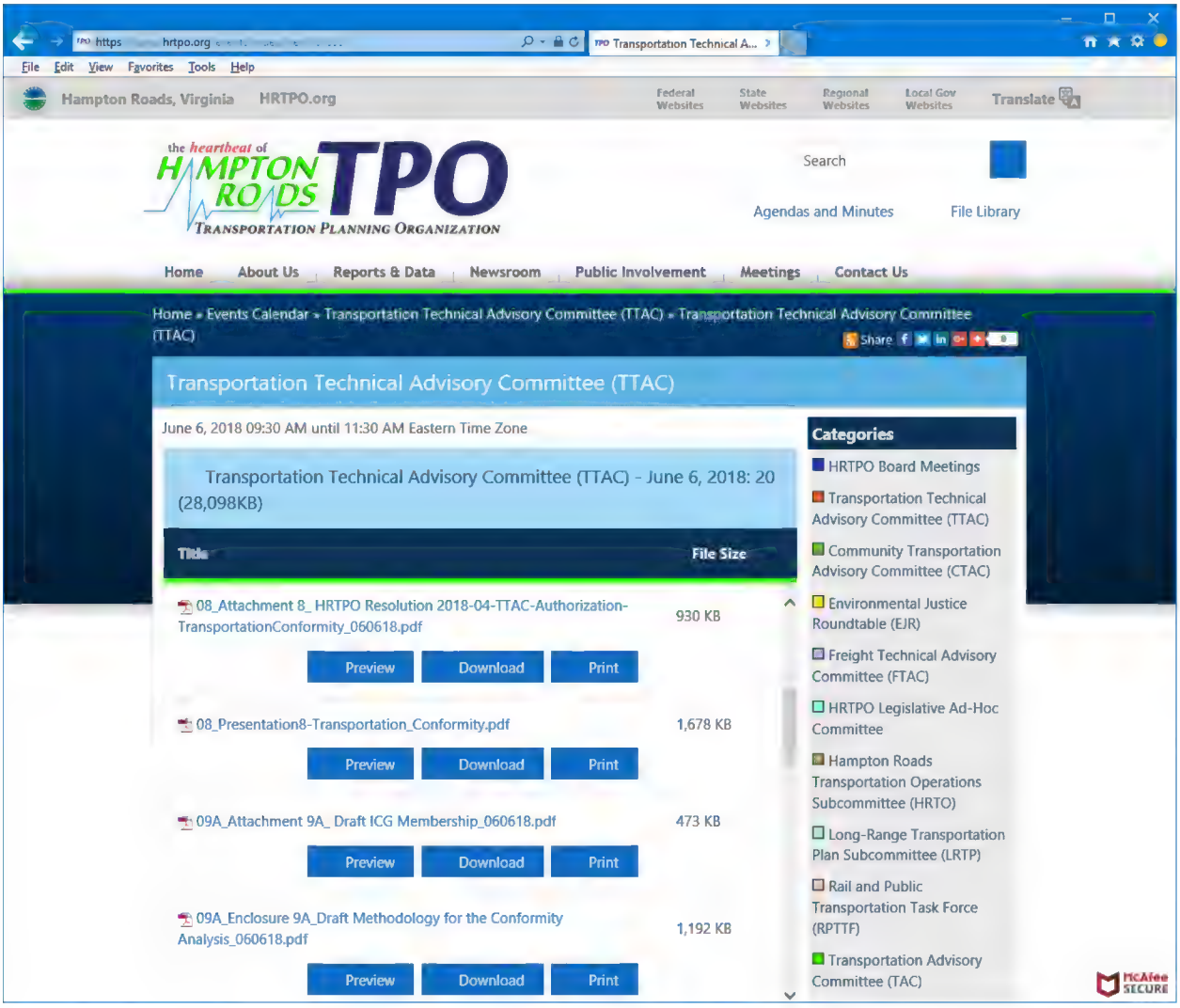
Jurisdiction	Annual Average Growth Rate
Chesapeake	1.69%
Gloucester	1.63%
Hampton	0.42%
Isle of Wight	2.54%
James City	2.50%
Newport News	1.07%
Norfolk	0.79%
Poquoson	1.16%
Portsmouth	0.62%
Suffolk	2.94%
Virginia Beach	0.86%
Williamsburg	1.37%
York	1.66%

the regional TDM to be applied for the conformity analysis.

[15] The annual growth data presented here are as presented as applied in the last conformity analysis and will be updated as needed for this conformity analysis.

HRTPO-TTAC Website for June 6 TTAC-ICG Meetings

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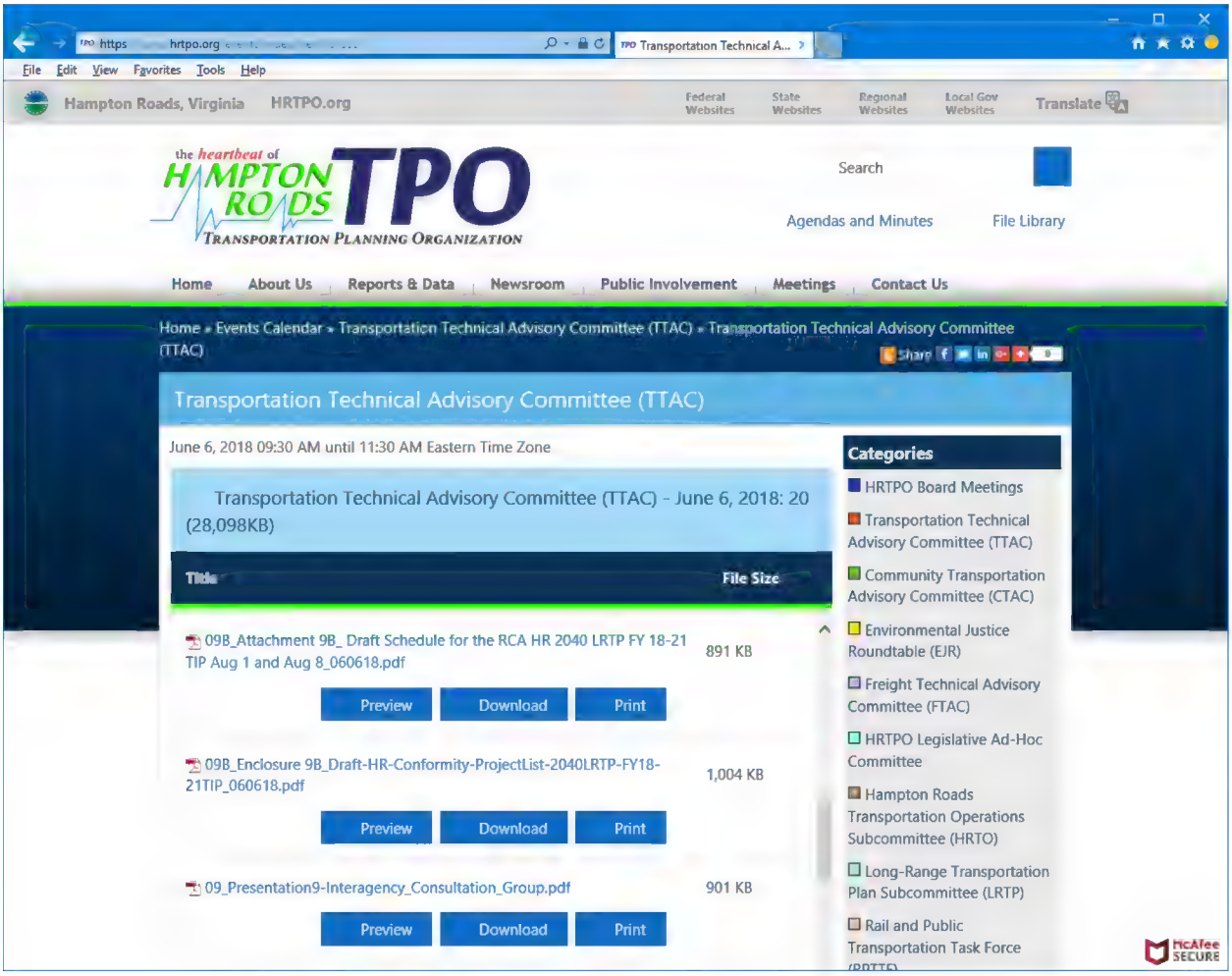
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09B_Attachment 9B_ Draft Schedule for the RCA HR 2040 LRTP FY 18-21 TIP Aug 1 and Aug 8_060618.pdf
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Upcoming Inter-Agency Consultation Group Meeting - SAVE THE D...

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Thu 5/24/2018 3:51 PM

Shirley Core

Upcoming Inter-Agency Consultation Group Meeting - SAVE THE DATE

To Sorey, Earl; Yorks, John; Kassel, Jacqueline; Raliski, Jeffrey; OConnell Dannan; Wright, James; Lewis, Robert E.; Solis, Brian; Murphy, Carolyn; Rizzio, Carol; Rudnicki, Richard ; Holt, Paul ; Cross, Timothy; Froncillo, Steven ; Hayes, Michael; Parker, Bridgette; Vest, Debbie; Earley, Sherry; Small Aaron; Ducey-Ortiz, Anne; Rosario, Tammy; Dale Stith; Jackson, Jamie; Moore, Josh; 'lhansen@suffolkva.us'; 'salewis-cheatham@deq.virginia.gov'; DeBruhl, Jennifer; Pontcello, Jim; 'peng.xiao@vdot.virginia.gov'; Rucker, Ivan; McGill, Melissa; 'becoat.gregory@epa.gov'; Murray, Rhonda, P. ;

Cc Voigt, Christopher; 'ed.sundra@dot.gov'; 'thomas.ballou@deq.virginia.gov'; Odom, Dawn ; Stringfield, Eric; Mike Kimbrel; John Mihaly

This message was sent with High importance.

This email is being sent on behalf of Ms. Dale Stith, HRTPO Principal Transportation Planner.

Good Afternoon,

This is an advance notice for an Inter-Agency Consultation Group (ICG) meeting scheduled for **Wednesday, June 6, 2018, beginning at 9:30 AM.** The ICG meeting will be an agenda item for the regularly scheduled Transportation Technical Advisory Committee (TTAC) meeting and will serve to initiate the consultation process for the upcoming air quality conformity analysis for the amended Hampton Roads 2040 Long-Range Transportation Plan (LRTP) and FY 2018-2021 Transportation Improvement Program (TIP). **Please note that a quorum will be needed to approve the ICG updates, conformity project list, and conformity analysis proposed approach (quorum includes the FHWA, DEQ, and EPA reps).**

A notice to the entire ICG will be distributed approximately one week before the meeting, including attachments for the project list, modeling methodology and schedule for the conformity analysis. The TTAC agenda will also be available at that time.

For the ICG agenda item, a call-in option will be arranged for ICG members who wish to participate by teleconference. Please let me know by close of business on Wednesday, May 30, 2018 if you plan to call in.

Please let me know if you have any questions.

Thank you.

the heartbeat of HAMPTON ROADS TPO
TRANSPORTATION PLANNING ORGANIZATION

Shirley Core
Administrative Assistant II
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June 6, 2018 TTAC Agenda for ICG members - Message (HTML)

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Fri 6/1/2018 9:35 AM

Shirley Core

June 6, 2018 TTAC Agenda for ICG members

To Dale Stith; 'Sorey, Earl'; 'Yorks, John'; 'Kassel, Jacqueline'; 'Raliski, Jeffrey'; 'OConnell Dannan'; 'Wright, James'; 'Lewis, Robert E.'; 'Solis, Brian'; 'Murphy, Carolyn'; 'Rizzio, Carol'; 'Rudnicki, Richard '; 'Holt, Paul '; 'Cross, Timothy'; 'Jackson, Jamie'; 'Moore, Josh'; 'lhansen@suffolkva.us'; 'salewis-cheatham@deq.virginia.gov'; 'DeBruhl, Jennifer'; 'Ponticello, Jim'; 'peng.xiao@vdot.virginia.gov'; 'becoat.gregory@epa.gov'; 'Rucker, Ivan'; 'McGill, Melissa'; 'Murray, Rhonda, P. '; 'Froncillo, Steven '; 'Hayes, Michael'; 'Parker, Bridgette'; 'Vest, Debbie'; 'Earley, Sherry'; 'Small Aaron';

Cc 'Voigt, Christopher'; 'ed.sundra@dot.gov'; 'thomas.ballou@deq.virginia.gov'; 'Odom, Dawn '; 'Stringfield, Eric'

Please see the corrected link below to the June 6, 2018 TTAC Agenda for ICG Members.

From: Shirley Core
Sent: Friday, June 01, 2018 9:28 AM
To: Sorey, Earl; Yorks, John; Kassel, Jacqueline; Raliski, Jeffrey; OConnell Dannan; Wright, James; Lewis, Robert E.; Solis, Brian; Murphy, Carolyn; Rizzio, Carol; Rudnicki, Richard ; Holt, Paul ; Cross, Timothy; Jackson, Jamie; Moore, Josh; 'lhansen@suffolkva.us'; 'salewis-cheatham@deq.virginia.gov'; DeBruhl, Jennifer; Ponticello, Jim; 'peng.xiao@vdot.virginia.gov'; 'becoat.gregory@epa.gov'; Rucker, Ivan; McGill, Melissa; Murray, Rhonda, P. ; Froncillo, Steven ; Hayes, Michael; Parker, Bridgette; Vest, Debbie; Earley, Sherry; Small Aaron; Ducey-Ortiz, Anne; Rosario, Tammy; Theresa Brooks; Branch, Keisha; Creel, Barbara; Arabia, Christopher
Cc: Voigt, Christopher; 'ed.sundra@dot.gov'; 'thomas.ballou@deq.virginia.gov'; Odom, Dawn ; Stringfield, Eric
Subject: June 6, 2018 TTAC Agenda for ICG members

The agenda and enclosures for the June 6, 2018 meeting of the HRTPO Transportation Technical Advisory Committee (TTAC) is now available on the HRTPO website. The direct link to the agenda and related information is: https://www.hrtpo.org/events/index/view/id/553

Please note that the Interagency Consultation Group (ICG) Agenda item is #9 on the TTAC Agenda.

For the ICG agenda item, a call-in option will be arranged for ICG members who wish to participate by teleconference. Please let me know by close of business on Monday, June 4, 2018 if you plan to call in.

Shirley Core
Administrative Assistant II
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Appendix E: Final Project List

Attached is the final plan and program project list for modeling as applied for the conformity analysis.

HAMPTON ROADS AMENDED 2040 LONG-RANGE TRANSPORTATION PLAN AND FY 2018-2021 TRANSPORTATION IMPROVEMENT PROGRAM PROJECT CONFORMITY LIST REGIONALLY-SIGNIFICANT PROJECTS

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
T15554	Multi-jurisdictional	Chesapeake Bay Bridge-Tunnel Parallel Thimble Shoal Tunnel	Virginia Beach	Northampton County	New Alignment, Widening	2	4	2028	Yes	Yes
T11488	Multi-jurisdictional	Downtown Tunnel/Midtown Tunnel/MLK Extension	Hampton Blvd	I-264	New Alignment, Widening	2,0	4	2018	N/A	Completed
T21555, T21557, T21558	Multi-jurisdictional	Hampton Roads Crossing: I-64/Hampton Roads Bridge-Tunnel Widening	I-664 at Hampton Coliseum	I-564	Widening	4	6/8	2028	Pending	Yes
110321	Multi-jurisdictional	I-64 Express Lanes - Segment 1 (HOV-to-HOT Conversion Project)	I-64/I-264	I-564	Conversion to HOT lanes	2	2	2018	Yes	Yes
112923	Multi-jurisdictional	I-64 Express lanes - Segment 2 (HOV-to-HOT Conversion Project)	I-64/I-264	Bowers Hill Interchnage	Conversion to HOT lanes	2	2	2028	Pending	Pending
	Multi-jurisdictional	I-64 Peninsula Widening: I-64/Fort Eustis Blvd Interchange	N/A	N/A	Interchange modifications and improvements	N/A	N/A	2040	No	Yes
104905	Multi-jurisdictional	I-64 Peninsula Widening: Segment 1	Jefferson Ave (Exit 255)	Rte 238 (Exit 247)	Widening	4	6	2018	Yes	Completed
106665	Multi-jurisdictional	I-64 Peninsula Widening: Segment 2	Rte 238 (Exit 247)	Rte 199 (Exit 242)	Widening	4	6	2028	Yes	Yes
106689, 109790	Multi-jurisdictional	I-64 Peninsula Widening: Segment 3	Rte 199 (Exit 242)	Rte 199 (Exit 234)	Widening	4	6	2028	Yes	Yes
111427 (UPC is for study)	Multi-jurisdictional	I-64 Southside Widening (including High Rise Bridge): Bowers Hill Interchange	N/A	N/A	Interchange modifications and improvements	N/A	N/A	2040	No	Yes
106692	Multi-jurisdictional	I-64 Southside Widening (including High Rise Bridge): Phase 1	I-64/I-464	I-64/I-664 at Bowers Hill	Widening	4	6	2028	Yes	Yes
	Multi-jurisdictional	I-64 Southside Widening (including High Rise Bridge): Phase 2	I-64/I-464	I-64/I-664 at Bowers Hill	Widening	6	8	2040	No	Yes
108042, 57048	Multi-jurisdictional	I-64/I-264 (including Witchduck Rd Interchange): Phase 1	N/A	N/A	Interchange modifications, improvements, and ramp widening	N/A	N/A	2028	Yes	Yes
108041, 17630	Multi-jurisdictional	I-64/I-264 (including Witchduck Rd Interchange): Phase 2	N/A	N/A	Interchange modifications, improvements, and ramp widening	N/A	N/A	2028	Yes	Yes
98813	Multi-jurisdictional	Route 189 (South Quay Rd) Bridge Replacement	0.15 mi S of Blackwater River	0.19 mi N of Blackwater River	Bridge Replacement	2	2	2028	No	N/A
106694	Multi-jurisdictional	US 460/58/13 Connector (including Regional Landfill and Hampton Roads Executive Airport Interchanges)	Bowers Hill	Eastern End of Suffolk Bypass	Improve to Interstate standards	6	6	2040	Yes	Yes
97715, 13427	Multi-jurisdictional	Wythe Creek Rd	Alphus St	Commander Shepard Blvd	Widening	2	3	2028	Yes	Yes
107350	Chesapeake	#SGR - CENTERVILLE TURNPIKE BRIDGE REHAB			Bridge Rehab w/o Added Capacity	2	2	N/A	N/A	N/A

*Note: 2018 is tentative pending further EPA guidance and may be replaced by a later first analysis year, such as 2021.

HAMPTON ROADS AMENDED 2040 LONG-RANGE TRANSPORTATION PLAN AND FY 2018-2021 TRANSPORTATION IMPROVEMENT PROGRAM PROJECT CONFORMITY LIST REGIONALLY-SIGNIFICANT PROJECTS

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
T21292	Chesapeake	#SGR - INDIAN RIVER ROAD (RTE 407) OVER INDIAN RIVER			Bridge Replacement	6	6	N/A	N/A	N/A
111220	Chesapeake	#SGR - SUNRAY OVERPASS SUPERSTRUCTURE REPLACEMENT			Replacement	4	4	N/A	N/A	N/A
111032	Chesapeake	#SGR - TRIPLE DECKER BRIDGE - LOWER LEVEL			Bridge Replacement	4	4	2028	N/A	N/A
111002	Chesapeake	#SGR - TRIPLE DECKER BRIDGE - UPPER LEVEL			Bridge Replacement	4	4	2028	N/A	N/A
109382	Chesapeake	Deep Crk AIW Bridge Replacement and G.W. Hwy (US 17)/Moses Grandy Trail Intersection Improvements	Mill Creek Pkwy	Diamond Ave	Bridge replacement, widening	2	5	2028	Yes	Yes
56187	Chesapeake	Dominion Blvd	0.05 mi N. of Great Bridge Blvd	0.75 mil S. of Cedar Rd	Widening	2	4	2018	Yes	Completed
56187	Chesapeake	Dominion Blvd Phase II	0.75 mi South of Cedar Rd	Existing 4-lane Segment South of Cedar Rd	Widening	2	4	2018	Yes	Yes
56187	Chesapeake	Dominion Boulevard Widening and Bridge Replacement	Cedar Rd (Rte 165)	Great Bridge Blvd (Rte 190)	Reconstruction w/ Added Capacity	2	4	N/A	Yes	Completed
	Chesapeake	Freeman Ave			Replace existing at-grade railroad crossing with an overpass	2	2	2040	No	Yes
	Chesapeake	George Washington Highway	Yadkin Road	Canal Drive	Widening	2	4	2028	No	Pending
1904	Chesapeake	Gilmerton Bridge	0.36 mi E. of Bridge (Bainbridge Blvd)	0.42 mi W. of Bridge (Shell Rd)	Reconstruct Bridge, Widening	2	4	2018	Yes	Completed
	Chesapeake	Mount Pleasant Rd - Phase I	Chesapeake Expressway (Route 168 Bypass)	Etheridge Rd	Widening	2	4	2030	No	Pending
	Chesapeake	Mount Pleasant Rd - Phase II	Etheridge Rd	Centerville Turnpike	Widening	3	4	2040	No	Pending
84359	Chesapeake	Mount Pleasant Road	Chesapeake Expressway (Route 168)	Etheridge Road	Reconstruction w/ Added Capacity	2	2	N/A	Yes	Completed
	Chesapeake	Portlock Rd			Replace existing at-grade railroad crossing with an overpass	N/A	N/A	2040	No	Yes
18591	Chesapeake	Portsmouth Blvd	Jolliff Rd	Suffolk CL	Widening	2	4	2018	Yes	Yes
	Chesapeake	Woodlake Dr	Battlefield Blvd	Existing Woodlake Dr	New Alignment	0	2	2018	N/A	Completed
110627 (Phase 1 to Hook Rd)	Gloucester County	G.W. Mem Hwy (US 17)	1 mi North of Coleman Bridge	Main St (@ Walmart)	Widening	4	6	2040	No	Yes

*Note: 2018 is tentative pending further EPA guidance and may be replaced by a later first analysis year, such as 2021.

HAMPTON ROADS AMENDED 2040 LONG-RANGE TRANSPORTATION PLAN AND FY 2018-2021 TRANSPORTATION IMPROVEMENT PROGRAM PROJECT CONFORMITY LIST REGIONALLY-SIGNIFICANT PROJECTS

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
108731	Hampton	Coliseum Drive Extension	Hampton Roads Center Parkway	Butler Farm Rd	New Alignment	0	4	2028	Yes	Yes
	Hampton	I-64 at Settlers Landing Rd	N/A	N/A	Ramp Modifications	N/A	N/A	2030	No	Yes
104363	Hampton	I-64 Interchange at Lasalle Ave	N/A	N/A	Interchange Improvements	N/A	N/A	2018	N/A	Completed
57047	Hampton	Saunders Rd	Big Bethel Rd	Newport News CL	Widening	2	4	2018	No	Yes
T21247	Isle of Wight County	#SGR- RTE. 644 OVER POPE SWAMP (FED ID 10424) REPLACEMENT			Bridge Replacement	2	2	N/A	N/A	N/A
81435	Isle of Wight County	Carrsville Highway Bridge Replacement over Route 632			Bridge Replacement w/o Added Capacity	2	2	2018	Yes	N/A
109314	Isle of Wight County	Nike Park Road Extension	Reynolds Dr	US 17	New Alignment	0	2	2028	Yes	Yes
81435	Isle of Wight County	RTE 58 BUSINESS BRIDGE (CARRSVILLE) OVER RTE. 632 AND CSX			Rail Overpass	N/A	N/A	N/A	N/A	N/A
100920	James City County	Croaker Rd Widening	Route 60	Rocahmbeau Rd	Widening	2	4	2028	Yes	Yes
	James City County	Jamestown Rd (Rte 31) Over Powhatan Creek			Bridge replacement	2	2	2040	No	Yes
98811, 100921	James City County	Longhill Rd (Phase 1)	Humelsine Pkwy (Rte 199)	Old Town Rd	Widening	2	4	2028	Yes	Yes
100200	James City County	Skiffes Creek Connector	Green Mount Pkwy	Merrimac Trail (Rte 143)	New Alignment	0	2	2028	Yes	Yes
4483	Newport News	Atkinson Blvd	Jefferson Ave	Warwick Blvd	New Alignment	0	4	2028	Yes	Yes
11816	Newport News	City Center Blvd (formerly Middle Ground Blvd)	Jefferson Ave	Warwick Blvd	New Alignment	0	4	2018	N/A	Completed
93077	Newport News	Denbigh Blvd Bridge Replacement	Richneck Rd	Trailblazer Blvd	Bridge Replacement	4	4	2028	Yes	Yes
105624	Newport News	Ft Eustis Blvd Bridge Replacement over NN Reservoir	Warwick Blvd	800' E of Lee Hall Reservoir	Bridge Replacement	4	4	2028	No	N/A
	Newport News	J. Clyde Morris Blvd / G.W. Hwy (US 17)	I-64	York CL	Widening	4	6	2040	No	Yes
101279	Newport News	Lake Maury Bridge Replacement	.08 mi S of Rte. 312	.35 mi N of Rte. 312	Bridge Replcament	6	6	2028	Yes	Yes

*Note: 2018 is tentative pending further EPA guidance and may be replaced by a later first analysis year, such as 2021.

HAMPTON ROADS AMENDED 2040 LONG-RANGE TRANSPORTATION PLAN AND FY 2018-2021 TRANSPORTATION IMPROVEMENT PROGRAM PROJECT CONFORMITY LIST REGIONALLY-SIGNIFICANT PROJECTS

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
101281	Newport News	Richneck Road Widening	south of Woodside Lane	1,105 feet north of Fawn Lake Drive	Reconstruction w/Added Capacity	2	2	N/A	Yes	Completed
14598	Newport News	Warwick Boulevard Relocation	existing 4-lane section at Fort Eustis Boulevard in Newport News	Blow Flats Road in James City County	New Construction	N/A	N/A	N/A	Yes	Completed
71691	Newport News	Warwick Boulevard Widening	0.9 miles north of J Clyde Morris Blvd (Rte 312)	0.2 miles north of Nettles Dr	Reconstruction w/ Added Capacity	4	6	N/A	Yes	Completed
77428	Newport News	Warwick Boulevard Widening	0.2 miles south of J. Clyde Morris Boulevard	Nettles Drive	Reconstruction w/Added Capacity	4	6	N/A	Yes	Completed
85955	Newport News	Washington Ave Bridge Replacement	39th St	41st St	Reconstruct Bridge	3	3	2018	Yes	Completed
109800	Norfolk	#HB2.FY17 REGIONAL COMMUTER EXPRESS BUS			Transit	N/A	N/A	N/A	Yes	N/A
59175	Norfolk	Air Terminal Interchange	N/A	N/A	New Interchange Access	N/A	N/A	2028	Yes	Yes
	Norfolk	Brambleton Ave	Midtown Tunnel	I-264	Widening	6	8	2030	No	Yes
107039	Norfolk	Campostella Bridge Rehabilitation	Kimball Terrace	Filmore Street	Bridge Rehab w/o Added Capacity	6	6	2028	Yes	N/A
109568	Norfolk	Granby Street Bridge Repairs	N/A	N/A	Bridge Rehab w/o Added Capacity	6	6	2018	Yes	N/A
Previously cancelled: 16557	Norfolk	Hampton Blvd at Terminal Blvd	Trouville Ave/Portor St	Hampton Blvd	New Highway/Rail Underpass	N/A	N/A	2030	No	Yes
107044	Norfolk	I-64 at Northampton Blvd Interchange	N/A	N/A	Interchange Improvements	N/A	N/A	2018	Yes	Yes
107044	Norfolk	I-64/Northampton Boulevard Interchange Modification	N/A	N/A	Traffic Management/Engineering	N/A	N/A	2018	Yes	Yes
18968	Norfolk	Intermodal Connector	I-564	Hampton Blvd	New Alignment	0	4	2018	Yes	Yes
1765	Norfolk	Military Hwy	0.3 mi N. of Northampton Blvd	0.3 S. of Northampton Blvd	Widening	4 and 6	6 and 8	2028	Yes	Yes
9783	Norfolk	Military Hwy	0.3 mile S. of Northampton Blvd	Lowery Rd	Widening	4 and 6	8	2028	Yes	Yes
84243	Norfolk	Military Hwy	Robin Hood Rd	0.3 mile N. of Northampton Blvd	Widening	4	6	2028	Yes	Yes
108729	Norfolk	West Ocean View Avenue	4th St	Mason Creek Rd	Remove bridge, replace with at-grade signal	4	4	2028	No	N/A

*Note: 2018 is tentative pending further EPA guidance and may be replaced by a later first analysis year, such as 2021.

HAMPTON ROADS AMENDED 2040 LONG-RANGE TRANSPORTATION PLAN AND FY 2018-2021 TRANSPORTATION IMPROVEMENT PROGRAM PROJECT CONFORMITY LIST REGIONALLY-SIGNIFICANT PROJECTS

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
107287	Portsmouth	#SGR - BRIDGE REPLACEMENT - PARADISE CREEK BRIDGE			Bridge Replacement	4	4	N/A	N/A	N/A
102715	Portsmouth	BRIDGE REPLACEMENT - CHURCHLAND BRIDGE			Bridge Replacement	4	4	N/A	N/A	N/A
102715	Portsmouth	Churchland Bridge			Reconstruct Bridge	4	4	2028	No	Yes
	Portsmouth	Elm Ave	Victory Blvd (Rte 239)	G.W. Hwy (US 17)	Widening	2	4	2030	No	Yes
65655	Portsmouth	Turnpike Rd	0.13 mi E. of Frederick Blvd	Constitution Ave	Widening	2	4	2018	Yes	Yes
111033	Suffolk	#SGR - CAROLINA ROAD OVER CYPRESS SWAMP			Bridge Replacement	2	2	N/A	N/A	N/A
111038	Suffolk	#SGR - EAST WASHINGTON STREET OVER JERICHO CANAL			Bridge Replacement	2	2	N/A	N/A	N/A
111037	Suffolk	#SGR - NANSEMOND PARKWAY OVER BEAMONS MILL POND			Bridge Replacement	2	2	N/A	N/A	N/A
T21269	Suffolk	#SGR -TURLINGTON ROAD OVER KILBY CREEK			Bridge Replacement	2	2	N/A	N/A	N/A
104359	Suffolk	Kenyon Court	Kenyon Rd	Holland Rd (US 58)	New Alignment	0	2	2018	N/A	Completed
110634	Suffolk	Nansemond Parkway/Wilroy Road Overpass Over Commonwealth Railway	N/A	N/A	Rail Overpass			2028	Yes	N/A
61407	Suffolk	Nansemond Pkwy	Chesapeake CL	NS Railroad	Widening	2	4	2028	Yes	Yes
	Suffolk	North Suffolk Connector	Nansemond Parkway	I-664	New Alignment	0	2	2028	No	Pending
100937	Suffolk	Route 58 (Holland Rd)	Suffolk Bypass	0.7 mi W. of Manning Bridge Rd	Widening	4	6	2028	Yes	Yes
108984	Suffolk	Speights Spillway Bridge Replacement	Speights Run Reservoir	Kilby Creek	Bridge replacement w/o added capacity	2	2	2028	Yes	N/A
	Virginia Beach	Birdneck Road	I-264	Virginia Beach Blvd	Widening	4	6	2030	No	Yes
109381	Virginia Beach	Centerville Tnpk - Phase III	Chesapeake CL	Kempsville Rd	Widening	2	4	2028	Yes	Yes
103005	Virginia Beach	Centerville Turnpike	Indian River Rd	Kempsville Rd	Widening	2	6	2028	Yes	Yes

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HAMPTON ROADS AMENDED 2040 LONG-RANGE TRANSPORTATION PLAN AND FY 2018-2021 TRANSPORTATION IMPROVEMENT PROGRAM PROJECT CONFORMITY LIST REGIONALLY-SIGNIFICANT PROJECTS

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
110803	Virginia Beach	Cleveland Street - Phase III	Witchduck Road	Clearfield Ave	Widening	2	4	2028	No	Yes
110803	Virginia Beach	Cleveland Street - Phase IV	Aragona Blvd	Independence Blvd	Widening	2/4	4	2028	No	Yes
	Virginia Beach	Dam Neck Road - Phase I	Princess Anne Rd	Holland Rd	Widening	4	6	2030	No	Yes
	Virginia Beach	Dam Neck Road - Phase II	Holland Rd	Drakesmile Rd	Widening	4	6	2030	No	Yes
	Virginia Beach	Dam Neck Road - Phase III	Drakesmile Rd	London Bridge Rd	Widening	4	6	2030	No	Yes
	Virginia Beach	Drakesmile Extended - Phase I	Dam Neck Rd	Holland Rd	New Alignment	0	4	2030	No	Yes
	Virginia Beach	Drakesmile Extended - Phase II	Holland Rd	Princess Anne Rd	New Alignment	0	4	2030	No	Yes
15828, 112317, 112318	Virginia Beach	Elbow Rd/Dam Neck Rd	Chesapeake CL	Virginia Beach Amphitheater	Widening	2	4	2028	Yes	Yes
	Virginia Beach	Ferrell Pkwy	Indian Lakes Blvd	Indian River Rd	Widening	4	6	2030	No	Yes
	Virginia Beach	Ferrell Pkwy	Indian Lakes Blvd	Pleasant Valley Rd	Widening	4	6	2030	No	Yes
	Virginia Beach	First Colonial Rd	Old Donation Pkwy	Virginia Beach Blvd	Widening	4	6	2030	No	Yes
	Virginia Beach	General Booth Blvd	London Bridge Road	Nimmo Parkway	Widening	4	6	2024	No	Pending
	Virginia Beach	General Booth Blvd	Oceana Blvd	Dam Neck Rd	Widening	6	8	2030	No	Yes
	Virginia Beach	Holland Rd	Rosemont Rd	Independence Blvd	Widening	4	6	2030	No	Yes
	Virginia Beach	Holland Road	Dam Neck Rd	Rosemont Rd	Widening	4	6	2030	No	Yes
15827	Virginia Beach	Holland Road	Nimmo Pkwy	Dam Neck Rd	Widening	2	4	2018	Yes	Yes
	Virginia Beach	Independence Blvd	Haygood Rd	Northampton Blvd	Widening	4	6	2030	No	Yes
13340 (old UPC; closed out)	Virginia Beach	Indian River Rd	Centerville Tnpk	Ferrell Pkwy	Widening	6	8	2030	No	Yes

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UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
15829, 110804 (Phase 7B)	Virginia Beach	Indian River Road - Phase VII-A	Lynnhaven Pkwy	Elbow Rd	Widening	2	4	2028	Yes	Yes
12546, 111711	Virginia Beach	Laskin Road - Phase I	Republic Rd	Oriole Dr	Widening	4	6/8	2028	Yes	Yes
	Virginia Beach	Laskin Road - Phase II	Oriole Dr	30th/31st St	Widening	4	6	2028	No	Yes
	Virginia Beach	Laskin Road Bridge Replacement	Laskin Rd	Laskin Rd	Bridge replacement, widening	4	6	2028	No	Yes
	Virginia Beach	Laskin Road Phase III	Republic Road	I-264	Widening	4	6	2024	Yes	Pending
97737	Virginia Beach	Lesner Bridge	E. Stratford Rd	Paige Ave	Reconstruct Bridge	4	4	2018	Yes	Yes
	Virginia Beach	London Bridge Road	Dam Neck Rd	Shipps Corner Rd	Widening	2	4	2030	No	Yes
	Virginia Beach	Lynnhaven Pkwy	Holland Rd	Princess Anne Rd	Widening	4	6	2030	No	Yes
14603	Virginia Beach	Lynnhaven Pkwy	Indian River Rd	Centerville Tnpk	New Alignment	0	4	2018	Yes	Completed
	Virginia Beach	Newtown Road	Baker Rd	Virginia Beach Blvd	Widening	4	6	2030	No	Yes
	Virginia Beach	Nimmo Pkwy	Indian River Rd/North Landing Rd	West Neck Rd Ext'd	New Alignment	0	2	2030	No	Yes
52058	Virginia Beach	Nimmo Pkwy	Holland Rd	General Booth Blvd	New Alignment	0	4	2018	N/A	Completed
107352	Virginia Beach	Princess Anne Rd - Phase VII	Fisher Arch	General Booth Blvd	Widening	2	4	2028	No	Yes
13482/93522/ 95555/96137	Virginia Beach	Princess Anne Rd and Nimmo Pkwy	Dam Neck Rd	Holland Rd	Widening	2	4	2018	N/A	Completed
	Virginia Beach	Princess Anne Road	Providence Rd	Salem Rd	Widening	4	6	2030	No	Yes
13482	Virginia Beach	Princess Anne Road Reconstruction	0.12 mi east of Dam Neck Rd	0.11 mi east of Nimmo Pkwy	Reconstruction w/added capacity	2	4	N/A	Yes	Completed
	Virginia Beach	Providence Road	Kempsville Rd	Princess Anne Rd	Widening	2	4	2030	No	Yes
Previously cancelled: 56912	Virginia Beach	Rosemont Rd	Virginia Beach Blvd	Holland Rd	Widening	4	6	2030	No	Yes

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HAMPTON ROADS AMENDED 2040 LONG-RANGE TRANSPORTATION PLAN AND FY 2018-2021 TRANSPORTATION IMPROVEMENT PROGRAM PROJECT CONFORMITY LIST REGIONALLY-SIGNIFICANT PROJECTS

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
105623	Virginia Beach	Rosemont Road - Phase V	Dam Neck Rd	Lynnhaven Pkwy	Widening	2	4	2028	No	Yes
	Virginia Beach	Salem Road	Elbow Rd	North Landing Rd	Widening	2	4	2030	No	Yes
	Virginia Beach	Salem Road	Independence Blvd	Elbow Rd	Widening	2	4	2030	No	Yes
Review services: T21237	Virginia Beach	Sandbridge Road - Nimmo VII-A	Sandpiper Road	Albuquerque Dr	New Alignment	0	4	2030	No	Yes
	Virginia Beach	Seaboard Road	Princess Anne Rd (North)	Princess Anne Rd (South)	Safety and mulitmodal improvements	2	2	2030	No	Yes
T11677	Virginia Beach	Shore Dr - Phase III	Eastern End of Lesner Bridge	Great Neck Rd	Safety improvements	4	4	2028	No	Yes
	Virginia Beach	Shore Drive	Norfolk CL	Diamond Springs Rd	Safety and mulitmodal improvements	4	4	2030	No	Yes
	Virginia Beach	Shore Drive - Phase II	Pleasure House Road	Treasure Island Drive	Widening	4	6	2030	No	Yes
	Virginia Beach	Shore Drive - Phase IV	Marlin Bay Drive/Shady Oaks Drive	West End of Lesner Bridge	Safety improvements	4	4	2030	No	Yes
PE & RW only, cancelled: 55209	Virginia Beach	West Neck Pkwy Ext'd	North Landing Rd	Indian River Rd	New Alignment	0	4	2030	No	Yes
	Virginia Beach	West Neck Pkwy Ext'd	Elbow Rd/Dam Neck Rd	North Landing Rd	New Alignment	0	4	2030	No	Yes
55202	Virginia Beach	Witchduck Road	I-264	Virginia Beach Blvd	Widening	4	6	2028	Yes	Yes
111787	York County	G.W. Mem Hwy (US 17)	Dare Rd	Old York-Hampton Hwy	Widening	4	6	2028	Pending	Yes
105222	York County	Route 134 Bridge Replacement over Brick Kiln Creek			Bridge Replacement w/o Added Capacity	4	4	2028	Yes	N/A
60843	York County	Route 17 (George Washington Memorial Hwy)	Hampton Hwy	Dare Rd	Widening	4	6	2018	N/A	Completed
111791	York County	Victory Blvd (Rte 171)	G.W. Mem Hwy (US 17)	Hampton Hwy (Rte 134)	Widening	5	6	2028	No	Yes
T10862	WATA - DRPT	Mounts Bay Route	N/A	N/A	Transit	N/A	N/A	2018	Yes	N/A

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PROJECTS NOT REGIONALLY-SIGNIFICANT

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
	Multi-jurisdictional	Bike Path Along Shore Dr/Hampton Blvd/Little Creek Rd	Norfolk Elizabeth River Trail	Virginia Beach City Line	Bike Lanes	N/A	N/A	2040	No	Yes
	Multi-jurisdictional	Elizabeth River Ferry Expansion Study	Current Service Locations	ODU and Naval Station Norfolk	Transit Study	N/A	N/A	N/A	No	Yes
	Multi-jurisdictional	Enhanced Bus Service/Bus Replacement - HRT	N/A	N/A	Enhanced Bus Service/Bus Replacement	N/A	N/A	N/A	No	Yes
	Multi-jurisdictional	Enhanced Bus Service/Bus Replacement - WATA	N/A	N/A	Enhanced Bus Service/Bus Replacement	N/A	N/A	N/A	No	Yes
105900	Multi-jurisdictional	ERC Task Order Funding - Downtown/Midtown Tunnel	N/A	N/A	Restoration and Rehabilitation	N/A	N/A	2028	Yes	N/A
112053	Multi-jurisdictional	Expanded Marine Highway Barge Service	N/A	N/A	Other	N/A	N/A	2028	Yes	N/A
105456	Multi-jurisdictional	Ferry Boat Pocahontas Engines and Drive Systems Replacement	N/A	N/A	Ferry Boats	N/A	N/A	2028	Yes	N/A
103927	Multi-jurisdictional	Green Operator Ocean-Going Vessel Hybrid Program	N/A	N/A	Environmentally Related	N/A	N/A	2028	Yes	N/A
103928	Multi-jurisdictional	Green Operator Truck Replacement Program	N/A	N/A	Environmentally Related	N/A	N/A	2018	Yes	N/A
	Multi-jurisdictional	Hampton Roads Crossing: Regional Connectors Study	N/A	N/A	Feasability Study of Remaining HRCS SEIS Segments	N/A	N/A	N/A	No	Yes
106693	Multi-jurisdictional	I-64/I-264 Interchange: Phase 3 Study	N/A	N/A	Study remaining movements of I-64/I-264 Interchange	N/A	N/A	N/A	No	Yes
108666	Multi-jurisdictional	MMMBT TRAFFIC & SAFETY IMPROVEMENTS			Safety	N/A	N/A	N/A	N/A	N/A
100947	Multi-jurisdictional	New Jamestown Ferry	N/A	N/A	Transit Replacement (larger ferry)	N/A	N/A	2018	N/A	N/A
	Multi-jurisdictional	Peninsula Fixed Guideway (A1 Alignment) Study	Newport News City Hall	Denbigh Blvd (Rte 173)	Transit Study	N/A	N/A	N/A	No	Yes
	Multi-jurisdictional	Portsmouth-Southside Light Rail Study	Portsmouth	Southside	Transit Study	N/A	N/A	N/A	No	Yes
108490	Multi-jurisdictional	Replace Ferry Boat Pocahontas Engines and Drive Systems	N/A	N/A	Ferry Boats	N/A	N/A	2018	Yes	N/A
95050	Multi-jurisdictional	Route 58 Lane Reversal Study	Route 58/Route 13 Interchange	I-264/I-64 Interchange	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
	Multi-jurisdictional	South Hampton Roads Trail: Virginia Beach (Bike Trails/Lanes Along Light Rail Tracks)	Norfolk	Oceanfront	Bicycle / Pedestrian Facility	N/A	N/A	2040	No	Yes

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PROJECTS NOT REGIONALLY-SIGNIFICANT

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
	Multi-jurisdictional	Southeastern Pkwy and Greenbelt (Study)	I-264	I-64/I-464	Study	0	4	N/A	No	Yes
106694	Multi-jurisdictional	US 460/58/13 (8-Lane Option) (Study)	Bowers Hill	Suffolk Bypass	Study	6	8	N/A	No	Yes
	Multi-jurisdictional	US 58 Study			Study	N/A	N/A	N/A	Yes	Yes
	Multi-jurisdictional	US Route 460 Environmental Study	Suffolk Bypass	West of Zuni	Study	N/A	N/A	N/A	No	Yes
	Multi-jurisdictional	Victory Blvd (Rte 171) (PE)	Poquoson CL	Hampton Hwy (Rte 134)	Study	2	4	N/A	No	Yes
	Multi-jurisdictional	Victory Blvd (Rte 171) (PE)	Wythe Creek Rd (Rte 172)	York County CL	Study	2	4	N/A	No	Yes
T21300	Chesapeake	#SGR - ELBOW ROAD OVER SPILLWAY AT NORFOLK RESIDENCY			Maintenance	N/A	N/A	N/A	N/A	N/A
T21379	Chesapeake	#SGR - KEMPSVILLE ROAD, SEGMENT 2			Resurfacing	N/A	N/A	2028	N/A	N/A
T21378	Chesapeake	#SGR - KEMPSVILLE ROAD, SEGMENT 3			Resurfacing	N/A	N/A	2028	N/A	N/A
T21294	Chesapeake	#SGR - NUMBER TEN LANE OVER LINDSEY DRAINAGE CANAL			Bridge Replacement	N/A	N/A	N/A	N/A	N/A
T21297	Chesapeake	#SGR - OLD MILL ROAD OVER DEEP CREEK			Bridge Replacement	N/A	N/A	2028	N/A	N/A
T21301	Chesapeake	#SGR - ROTUNDA AVENUE OVER TRIBUTARY GOOSE CREEK			Bridge Replacement	N/A	N/A	2028	N/A	N/A
111006	Chesapeake	CEDAR ROAD FLASHING YELLOW ARROWS (FYA)			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
110801	Chesapeake	CHESAPEAKE SIGNAL SYSTEM - PHASE 4			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
106997	Chesapeake	Chesapeake Signal Timing - Phase 1A	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
109803	Chesapeake	Chesapeake Signal Timing - Phase 1B	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	N/A	Yes	N/A
107032	Chesapeake	Chesapeake Signal Timing - Phase 2	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
107033	Chesapeake	Chesapeake Signal Timing - Phase 3	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A

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PROJECTS NOT REGIONALLY-SIGNIFICANT

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
109418	Chesapeake	CHESAPEAKE SIGNAL TIMING & INCIDENT MANAGEMENT PLANS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T20978	Chesapeake	Chesapeake Traffic Signal System Preemption Upgrade	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
113199	Chesapeake	Elbow Road Widening, Phase 2	.75 E of Centerville	VB city line	Safety Improvements	2	2	2028	No	N/A
106449	Chesapeake	Great Bridge Battlefield and Waterway Visitor Center - Phase 2	N/A	N/A	Environmentally Related	N/A	N/A	2018	Yes	N/A
110753	Chesapeake	GREAT BRIDGE BLVD. RIGHT TURN LANE			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
111982	Chesapeake	I-64 Southside Widening & High-Rise Bridge Phase 1 GARVEE Debt Service	N/A	N/A	Deb Service	N/A	N/A	N/A	Yes	N/A
112897	Chesapeake	I-664 NB RAMP EXTENSION FROM US 58 WB			Safety Improvement (HSIP)	N/A	N/A	N/A	N/A	N/A
T21362	Chesapeake	KEMPSVILLE ROAD, SEGMENT 1			Resurfacing	N/A	N/A	2028	N/A	N/A
T9111	Chesapeake	Liberty Street Transit Improvements	N/A	N/A	Transit Enhancement	N/A	N/A	2018	Yes	N/A
	Chesapeake	Light Rail Transit Extension to Greenbrier Area Study	South Norfolk	Greenbrier Area	Transit Study	N/A	N/A	N/A	No	Yes
	Chesapeake	Mt Pleasant Rd/Great Bridge Bypass	N/A	N/A	Intersection Improvements	N/A	N/A	2040	No	Yes
110989	Chesapeake	POINDEXTER ST.-INSTALL CONCRETE CROSSING SURFACE			Maintenance	N/A	N/A	N/A	N/A	N/A
T21338	Chesapeake	PROVIDENCE ROAD & MOUNT PLEASANT ROAD FYA	N/A	N/A	Intersection Improvements	N/A	N/A	N/A	N/A	N/A
T21335	Chesapeake	S. MILITARY HIGHWAY & GEORGE WASHINGTON HIGHWAY FYA	N/A	N/A	Intersection Improvements	N/A	N/A	N/A	N/A	N/A
	Chesapeake	South Hampton Roads Trail: Western Branch	Taylor Rd	Poplar Hill Rd	Shared Use Path	N/A	N/A	2040	No	Yes
111005	Chesapeake	WESTERN BRANCH BLVD FLASHING YELLOW ARROWS (FYA)			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
98806	Gloucester County	George Washington Memorial Highway Signal Timing Improvements	Coleman Bridge	Route 17/Route 17 Bus intersection	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
100625	Gloucester County	Guinea Road and Hayes Road Bicycle and Pedestrian Improvements			Facilities for Pedestrians and Bicycles	N/A	N/A	2018	Yes	N/A

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PROJECTS NOT REGIONALLY-SIGNIFICANT

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
107414	Gloucester County	Roaring Springs Road (616) Bicycle/Pedestrian Improvements			Facilities for Pedestrians and Bicycles	N/A	N/A	2028	Yes	N/A
T21200	Hampton	#SGR PRIMARY EXTENSION PAVING - KECOUGHTAN RD/ SETTLERS LND			Paving	N/A	N/A	N/A	N/A	N/A
T21198	Hampton	#SGR PRIMARY EXTENSION PAVING - MERCURY BLVD/ HALIFAX AVENUE			Paving	N/A	N/A	N/A	N/A	N/A
111016	Hampton	#SMART18 - POWER PLANT PARKWAY SIDEWALKS			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
T21288	Hampton	ARCONIC PEDESTRIAN IMPROVEMENTS			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
93081	Hampton	Bridge Street Bridge	Rudd Ln	Marrow St	Bridge Replacement	2	2	2018	Yes	Yes
102988	Hampton	Buckroe Avenue Reconstruction - Sidewalks, Crosswalks, and Lighting	N First Street	N Mallory Street	Facilities for Pedestrians and Bicycles	N/A	N/A	2018	Yes	N/A
84474	Hampton	Coliseum Central Transit Improvements - Transit Shelters	N/A	N/A	Transit Enhancement	N/A	N/A	2018	Yes	N/A
102866	Hampton	Cunningham Drive Sidewalk Project	Todds Lane	Mercury Boulevard	Facilities for Pedestrians and Bicycles	N/A	N/A	2028	Yes	N/A
102953	Hampton	East Pembroke Avenue Reconstruction - Sidewalks, Crosswalks	Old Buckroe Road	Skyland Drive	Facilities for Pedestrians and Bicycles	N/A	N/A	2018	Yes	N/A
104372	Hampton	FREEMAN DR. RECONSTRUCTION			Reconstruction	N/A	N/A	N/A	N/A	N/A
T20980	Hampton	Hampton Emergency Vehicle Preemption	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	N/A	Yes	N/A
102865	Hampton	Hampton Signal Upgrades - Phase IV	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
102867	Hampton	Hampton Traffic Signal System Retiming	N/A	N/A	Traffic Management/Engineering	N/A	N/A	2018	Yes	N/A
	Hampton	I-64 at Lasalle Ave (PE)	I-64 WB	Lasalle Ave	Study	N/A	N/A	N/A	No	Yes
	Hampton	I-64 at N. King St (PE)	N/A	N/A	Study	N/A	N/A	N/A	No	Yes
105476	Hampton	Implement ITS Devices on I-64 in Hampton	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
109304	Hampton	Little Back River Road Reconstruction	N King Street	Valirey Drive	Reconstruction	N/A	N/A	2028	Yes	N/A

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PROJECTS NOT REGIONALLY-SIGNIFICANT

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
102973	Hampton	Mallory Street Sidewalks, Crosswalks, and Lighting	Mercury Boulevard	West Sewell Street	Facilities for Pedestrians and Bicycles	N/A	N/A	2018	Yes	N/A
T21286	Hampton	MERCURY BLVD - PEDESTRIAN IMPROVEMENTS			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
T21314	Hampton	MERCURY BLVD PEDESTRIAN IMPROVEMENTS			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
102971	Hampton	Mercury Boulevard Reconstruction - Sidewalks, Crosswalks, and Lighting	Coliseum Drive	Aberdeen Road	Facilities for Pedestrians and Bicycles	N/A	N/A	2018	Yes	N/A
107340	Hampton	N. KING STREET IMPROVEMENTS - PHASE IV			Streetscaping	N/A	N/A	2018	N/A	N/A
102986	Hampton	N. King Street Reconstruction - Sidewalks, Crosswalks, and Lighting	Little Back River Road	Langley AFB Entrance	Facilities for Pedestrians and Bicycles	N/A	N/A	N/A	Yes	N/A
110008	Hampton	Pembroke Ave (1B) - Reconstruct C&G, sidewalk, crosswalks			Pedestrian Improvements	N/A	N/A	2028	No	N/A
111001	Hampton	POWHATAN PARKWAY @ VICTORIA BLVD NEW TRAFFIC SIGNAL MAST ARM			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21208	Hampton	PRIMARY EXTENSION PAVING - VICTORIA BLVD/PEAR AVE			Paving	N/A	N/A	N/A	N/A	N/A
T21204	Hampton	PRIMARY EXTENSION PAVING - VICTORIA BLVD/POWHATAN AVE			Paving	N/A	N/A	N/A	N/A	N/A
83454	Hampton	Todds Lane/Big Bethel Road Intersection Improvements	N/A	N/A	Reconstruction w/o Added Capacity	N/A	N/A	2018	Yes	N/A
109410	Hampton	TRAFFIC SIGNAL SYSTEM RETIMINGS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
109481	Isle of Wight County	#HB2.FY17 RTE 17 AT US RTE 258 INT CAPACITY IMPROVEMENTS	N/A	N/A	Intersection Improvements	N/A	N/A	N/A	N/A	N/A
T21250	Isle of Wight County	#SGR- RTE. 683 OVER STALLINGS CRK (FED ID 10441) REPLACEMENT			Bridge Replacement	N/A	N/A	N/A	N/A	N/A
111339	Isle of Wight County	#SGR RTE. 692 OVER CHAMPION SWAMP (FED ID 10445) REPLACEMENT			Bridge Replacement	N/A	N/A	N/A	N/A	N/A
T21381	Isle of Wight County	#SGR-RTE.638 OVER BURNT MILL SWAMP FED ID 10417 REPLACEMENT			Bridge Replacement	N/A	N/A	N/A	N/A	N/A
T21380	Isle of Wight County	#SGR-RTE.690 OVER ENNIS POND (FED ID 10442) REPLACEMENT			Bridge Replacement	N/A	N/A	N/A	N/A	N/A
T21234	Isle of Wight County	CHURCH ST/SHILOH DR SIDEWALK CONSTRUCTION			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A

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HAMPTON ROADS AMENDED 2040 LONG-RANGE TRANSPORTATION PLAN AND FY 2018-2021 TRANSPORTATION IMPROVEMENT PROGRAM PROJECT CONFORMITY LIST
PROJECTS NOT REGIONALLY-SIGNIFICANT

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
58297	Isle of Wight County	Courthouse Highway/Foursquare Road Intersection Improvements			Reconstruction w/o added capacity	N/A	N/A	2018	Yes	N/A
91219	Isle of Wight County	Isle of Wight Multi-Use Trail	Cypress Creek Bridge	Nike Park	Facilities for Pedestrians and Bicycles	N/A	N/A	2018	Yes	N/A
101793	Isle of Wight County	Isle of Wight Multi-Use Trail - Segment 1	Nike Park Road	South Church Street	Facilities for Pedestrians and Bicycles	N/A	N/A	2018	Yes	N/A
101794	Isle of Wight County	Isle of Wight Multi-Use Trail - Segment 2	Battery Park Road	Carrolton Nike Park	Facilities for Pedestrians and Bicycles	N/A	N/A	2018	Yes	N/A
102951	Isle of Wight County	Main Street Pedestrian Improvements	N/A	N/A	Facilities for Pedestrians and Bicycles	N/A	N/A	2028	Yes	N/A
102951	Isle of Wight County	MAIN STREET PEDESTRIAN IMPROVEMENTS			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
109481	Isle of Wight County	Route 17/Route 258 Intersection Improvements			Reconstruction w/added capacity	N/A	N/A	2028	Yes	N/A
105469	Isle of Wight County	Rte 620 Reconstruction - Broadwater Road			Reconstruction w/o Added Capacity	N/A	N/A	2028	Yes	N/A
103021	Isle of Wight County	Turner Drive/Benns Church Boulevard Intersection Improvements	N/A	N/A	Traffic Management/Engineering	N/A	N/A	2028	Yes	N/A
109495	James City County	#SGR JAMES CITY 2017 PLANT MIX, STATE OF GOOD REPAIR			Maintenance	N/A	N/A	N/A	N/A	N/A
101871	James City County	Airport Access Road	Marclay Rd at Rte 617	Airport	Widening	2	2	2018	No	Yes
98823	James City County	BRIDGE REPLACEMENT RTE 601 OVER DIASCUND CREEK, FED ID 10516			Bridge Replacement	N/A	N/A	N/A	N/A	N/A
102944	James City County	Centerville Rd at News Rd	0.27 mi North of News Road	0.19 mi South of News Rd	Intersection Improvements	2	3	2028	Yes	Yes
T21123	James City County	GROVE SUBD - SHLDER WIDENING & PAVEMENT/DRAINAGE/DITCH DEFI			Enhancement	N/A	N/A	N/A	N/A	N/A
	James City County	Humelsine Pkwy (Rte 199) at Colonial Pkwy	N/A	N/A	Intersection Improvements	4	4	2040	No	Yes
111237	James City County	JAMES CITY COUNTY TRANSPORTATION MASTER PLAN			Study	N/A	N/A	N/A	N/A	N/A
82961	James City County	Monticello Ave at Ironbound Rd (Rte 315)	N/A	N/A	Intersection Improvements	N/A	N/A	2018	Yes	Yes
102980	James City County	Pocahontas Trail Multimodal Corridor	N/A	N/A	Facilities for Pedestrians and Bicycles	N/A	N/A	2028	Yes	N/A

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PROJECTS NOT REGIONALLY-SIGNIFICANT

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
102980	James City County	POCAHONTAS TRAIL RECONSTRUCTION			Reconstruction	N/A	N/A	N/A	N/A	N/A
T21071	James City County	RECONSTRRUCT ADA SIDEWALK AND BIKE AND PED.			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
102947	James City County	Richmond Rd (US 60) at Humelsine Pkwy (Rte 199) West Ramp	N/A	N/A	Intersection Improvements	1	3	2018	No	Yes
17633	James City County	Richmond Road Multi-Use Trail	N/A	N/A	Facilities for Pedestrians and Bicycles	N/A	N/A	2028	Yes	N/A
102948	James City County	Route 199/Brookwood Drive Intersection Improvements	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
13496	James City County	Route 60 (Pocahontas Trail) Relocation	existing 4-lane section at Fort Eustis Boulevard in Newport News	Blow Flats Road in James City County	New Construction	N/A	N/A	N/A	Yes	Completed
98823	James City County	Rte 601 Over Diascund Creek	0.87 mi to Int Rte. 603	0.87 mi to Rte. 603	Bridge replacement	2	2	2030	Yes	Yes
	James City County	Sidewalks along Longhill Rd over Route 199	DePue Drive	Lane Place	Sidewalks	N/A	N/A	2040	No	Yes
	James City County	WATA Administrative Operations Center	N/A	N/A	New Operations Center	N/A	N/A	2028	Yes	Yes
109801	Newport News	#HB2.FY17 PENINSULA REGIONAL PARK AND RIDE ENHANCEMENT			Transit Enhancement	N/A	N/A	N/A	N/A	N/A
T21518	Newport News	#SGR OYSTER POINT ROAD MILL AND OVERLAY			Maintenance	N/A	N/A	N/A	N/A	N/A
103027	Newport News	27th Street/Buxton Avenue Intersection Improvements to Reduce Flooding	N/A	N/A	Intersection Improvements	N/A	N/A	2018	Yes	N/A
108980	Newport News	BRIARFIELD SIDEWALK			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
105625	Newport News	CAMPBELL ROAD RECONSTRUCTION			Reconstruction	N/A	N/A	N/A	N/A	N/A
T20850	Newport News	Canon Boulevard Signal - Oyster Point Access Improvements	Old Oyster Point Rd	Oyster Point Rd	Turn lane / Mast arm replacement	N/A	N/A	2028	No	N/A
111081	Newport News	CITY OF NEWPORT NEWS CITYWIDE SIGNAL SYSTEM PROGRESSION			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
111034	Newport News	CITYWIDE FLASHING YELLOW ARROW UPGRADES			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21414	Newport News	DENBIGH BOULEVARD SIDEWALK			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A

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PROJECTS NOT REGIONALLY-SIGNIFICANT

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T21416	Newport News	HARPERSVILLE ROAD SIDEWALK			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
108722	Newport News	HOGAN DRIVE PH 2			New Construction	0	2	2028	N/A	N/A
	Newport News	I-64 at Denbigh Blvd (Rte 173) (Study)	N/A	N/A	Study	N/A	N/A	N/A	No	Yes
108725	Newport News	Independence Boulevard (PE Only)	Denbigh Boulevard	Fort Eustis Boulevard	Study	N/A	N/A	N/A	Yes	N/A
83435	Newport News	J. Clyde Morris Boulevard Bicycle Improvements - Phase V	Jefferson Ave (Rte 143)	Thimble Shoals Blvd	Facilities for Pedestrians and Bicycles	N/A	N/A	2018	Yes	N/A
111091	Newport News	Jefferson Ave / Yorktown Rd Intersection Improvement	0.25 mi S of Jefferson Ave	0.25 mi N of Jefferson Ave	Intersection improvements	N/A	N/A	2028	No	N/A
83252	Newport News	Jefferson Avenue Pedestrian Improvements	J Clyde Morris Blvd (Rte 17)	Buchanan Dr	Facilities for Pedestrians and Bicycles	N/A	N/A	2018	Yes	N/A
111090	Newport News	JEFFERSON AVENUE SIDEWALK			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
T21418	Newport News	JEFFERSON AVENUE SIDEWALK			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
102969	Newport News	Jefferson Avenue Streetscaping	24th Street	12th Street	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
111035	Newport News	JEFFERSON AVENUE@ PAVILION PLACE NEW TRAFFIC SIGNAL			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
	Newport News	Liberty Pkwy	Oyster Point Rd	Freedom Way	New Alignment	0	2	2040	No	Yes
83254	Newport News	Mariner's Museum Multi-Purpose Trail	Avenue of the Arts	north of Harpersville Road	Facilities for Pedestrians and Bicyclesw	N/A	N/A	2028	Yes	N/A
101278	Newport News	Newport News Citywide Installation of ADA Compliant Sidewalk Accessibility	N/A	N/A	Pedestrian Improvements	N/A	N/A	2018	Yes	N/A
101280	Newport News	Newport News Citywide Installation of Opticom Signal Preemption Equipment	N/A	N/A	Safety/Traffice Opers/TSM	N/A	N/A	2018	Yes	N/A
107058	Newport News	Newport News Citywide Signal Retiming	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
107058	Newport News	NEWPORT NEWS CITYWIDE SIGNAL SYSTEM RETIMING			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
100608	Newport News	Newport News Intelligent Transportation System Upgrades	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A

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PROJECTS NOT REGIONALLY-SIGNIFICANT

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102734	Newport News	Newport News Multimodal High-Speed and Intercity Passenger Rail Station Development	N/A	N/A	New Multimodal Transportation Center	N/A	N/A	N/A	Yes	Yes
103059	Newport News	Newport News Pedestrian Improvements	N/A	N/A	Facilities for Pedestrians and Bicycles	N/A	N/A	2028	Yes	N/A
103059	Newport News	NEWPORT NEWS PEDESTRIAN IMPROVEMENTS			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
98830	Newport News	Newport News Signal Timing Improvements	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
103016	Newport News	Newport News Signal Timing Improvements	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
103016	Newport News	NEWPORT NEWS SIGNAL TIMING IMPROVEMENTS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
109075	Newport News	Newport News Transportation Center - Grading, Drainage, & Utilities	N/A	N/A	Passenger Rail Facility	N/A	N/A	2028	Yes	N/A
109076	Newport News	Newport News Transportation Center - Station, Platform, & Site Finishes	N/A	N/A	Passenger Rail Facility	N/A	N/A	2028	Yes	N/A
100856	Newport News	Oakland Industrial Park Sidewalk Phase 2	N/A	N/A	Facilities for Pedestrians and Bicycles	N/A	N/A	2028	Yes	N/A
T21187	Newport News	OYSTER POINT ACCESS IMPROVEMENTS- RAMPS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
88879	Newport News	Phase 3a/Phase C502 - Lee Hall Depot Rehabilitation	N/A	N/A	Historic Preservation	N/A	N/A	2018	Yes	N/A
111065	Newport News	ROCK LANDING DRIVE @ OMNI BOULEVARD NEW TRAFFIC SIGNAL			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21420	Newport News	WARWICK BOULEVARD AND ORIANA ROAD	N/A	N/A	Intersection improvements	N/A	N/A	N/A	N/A	N/A
108981	Newport News	WARWICK BOULEVARD SIDEWALK WIDENING			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
103002	Newport News	Warwick Boulevard/Bland Boulevard Intersection Improvements to Minimize Flooding	N/A	N/A	Intersection Improvements	N/A	N/A	2028	Yes	N/A
T21510	Newport News	YORKTOWN ROAD 728 MILL AND OVERLAY			Maintenance	N/A	N/A	N/A	N/A	N/A
T21509	Newport News	YORKTOWN ROAD 729 MILLING AND OVERLAY			Maintenance	N/A	N/A	N/A	N/A	N/A
109303	Norfolk	#HB2.FY17 NORFOLLK TRAFFIC CONTROL SYSTEM PLATFORM UPGRADE			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A

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PROJECTS NOT REGIONALLY-SIGNIFICANT

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T21193	Norfolk	#SGR PRIMARY EXTENSION PAVING - HAMPTON BLVD/ 39ST./ 49ST.			Maintenance	N/A	N/A	N/A	N/A	N/A
T21183	Norfolk	#SGR PRIMARY EXTENSION PAVING - HAMPTON BLVD/ BRIDGE/ 49ST.			Maintenance	N/A	N/A	N/A	N/A	N/A
111017	Norfolk	#SMART18 - BRAMBLETON AVE/ TIDEWATER DR. INTERSECTION IMPRV.	N/A	N/A	Intersection improvements	N/A	N/A	N/A	N/A	N/A
111019	Norfolk	#SMART18 - BRAMBLETON AVE/PARK AVE INTERSECTION IMPROVEMENTS	N/A	N/A	Intersection improvements	N/A	N/A	N/A	N/A	N/A
111021	Norfolk	#SMART18 - GRANBY STREET BIKE LANES			Facilities for Pedestrians and Bicycles	N/A	N/A	N/A	N/A	N/A
T20963	Norfolk	ADA RAMPS UPGRADE - PHASE 4			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T20965	Norfolk	CHESAPEAKE BOULEVARD RECONSTRUCTION			Reconstruction	N/A	N/A	N/A	N/A	N/A
T20981	Norfolk	E. LITTLE CREEK RD/ADMIRAL TAUSSING BLVD. INTERSECTION	N/A	N/A	Intersection improvements	N/A	N/A	N/A	N/A	N/A
101247	Norfolk	E. Little Creek Road/Tidewater Drive Grade Separated Rehabilitation	N/A	N/A	Reconstruction	N/A	N/A	2018	Yes	N/A
108730	Norfolk	Granby/Bayview Intersection Improvements	N/A	N/A	Intersection improvements	N/A	N/A	2028	No	N/A
T20982	Norfolk	HAMPTON BLVD AND AZALEA CT. INTERSECTION IMPROVEMENTS	N/A	N/A	Intersection improvements	N/A	N/A	N/A	N/A	N/A
14672	Norfolk	Hampton Blvd Railroad Grade Separation	Rogers Ave	B Ave	Reconstruct Underpass	N/A	N/A	2018	Yes	Completed
108423	Norfolk	HRBT OVER HEIGHT DETECTION			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
	Norfolk	I-264 at Ballentine Blvd Diverging Diamond Interchange (Study)	N/A	N/A	Study	N/A	N/A	N/A	No	Yes
108635	Norfolk	I-64 HAMPTON RD ATM - PHASE I WB			ITS/ATM	N/A	N/A	2028	N/A	N/A
111023	Norfolk	INSTALL AND UPGRADE COUNTDOWN PEDESTRIAN SIGNALS			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
T21284	Norfolk	INT. IMPRV. UPGRAD TRAFFIC SIGNAL & PED FACILITIES			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21285	Norfolk	LAKE TAYLOR SIDEWALK IMPROVEMENTS			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A

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PROJECTS NOT REGIONALLY-SIGNIFICANT

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T20984	Norfolk	LITTLE CREEK RD/SHORE DRIVE INTERSECTION IMPROVEMENTS	N/A	N/A	Intersection improvements	N/A	N/A	N/A	N/A	N/A
T20964	Norfolk	LLEWELLYN AVENUE BIKE AND ROADWAY IMPROVEMENTS			Facilities for Pedestrians and Bicycles	N/A	N/A	N/A	N/A	N/A
110385	Norfolk	Military Highway Widening - GARVEE Debt Service	N/A	N/A	Debt Service	N/A	N/A	N/A	Yes	N/A
110387	Norfolk	Military Highway Widening - Phase I - GARVEE Debt Service	N/A	N/A	Debt Service	N/A	N/A	N/A	Yes	N/A
	Norfolk	Military Hwy at I-64 -- New EB On-Ramp (Study)	N/A	N/A	Study	N/A	N/A	N/A	No	Yes
T7547	Norfolk	Naval Station Norfolk Transit Extension Study	Existing LRT	Naval Station Norfolk	Transit Study	N/A	N/A	N/A	No	Yes
109565	Norfolk	Norfolk Citywide Pedestrian Improvements	N/A	N/A	Facilities for Pedestrians and Bicycles	N/A	N/A	2028	Yes	N/A
T20979	Norfolk	Norfolk Emergency Vehicle Preemption	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
108796	Norfolk	NORFOLK PEDESTRIAN SIGNAL UPGRADE - CITYWIDE			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
105590	Norfolk	Norfolk Signal System Improvements - Phase 4A	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
105591	Norfolk	Norfolk Signal System Improvements - Phase 4B	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
105592	Norfolk	Norfolk Signal System Improvements - Phase 4C	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
98828	Norfolk	Norfolk Signal System Improvements - Phase IV	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
102950	Norfolk	Norfolk Signal Timing Improvements - Phase III	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
109303	Norfolk	Norfolk Traffic Control System Platform Upgrade	N/A	N/A	Trafic Management/Engineering	N/A	N/A	2018	Yes	N/A
92748	Norfolk	Ocean View Avenue Signal Upgrades	4th View St	Shore Dr (Rte 60)/Little Creek Rd (Rte 170)	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
T21196	Norfolk	PRIMARY EXTENSION PAVING - HAMPTON BLVD/ 39TH ST.			Maintenance	N/A	N/A	N/A	N/A	N/A
T21195	Norfolk	PRIMARY EXTENSION PAVING - HAMPTON BLVD/ BOLLING AVE.			Maintenance	N/A	N/A	N/A	N/A	N/A

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T21433	Norfolk	PRITCHARD ST - INSTALL FLASHING LIGHTS AND GATES			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
111024	Norfolk	SYSTEMIC FLASHING YELLOW ARROW IMPROVEMENTS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21326	Norfolk	SYSTEMIC FLASHING YELLOW ARROW IMPROVEMENTS PHASE 2			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21328	Norfolk	SYSTEMIC RETROREFLECTIVE BACKPLATE IMPROVEMENTS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21591	Norfolk	TIDEWATER DRIVE AND EASY STREET SAFETY IMPROVEMENTS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
109312	Norfolk	U.S. 58 Corridor Intersection Capacity & Safety	Newtown Rd	Clarence St	Intersection improvements	N/A	N/A	2028	Yes	N/A
109312	Norfolk	Virginia Beach Boulevard Corridor Intersection Capacity & Safety	N/A	N/A	Intersection improvements	N/A	N/A	2028	Yes	N/A
111788	Norfolk	#SMART18 - I-264 W Off-Ramp at Ballentine Boulevard			Safety/Traffic Opers/TSM	N/A	N/A	2028	No	N/A
	Poquoson	Laydon Way at Poquoson Ave at Little Florida Rd	N/A	N/A	Intersection Improvements	N/A	N/A	2030	No	Yes
112657	Poquoson	Rte 171 (Poquoson Ave) Sidewalk & Crosswalk Construction			Pedestrian Improvements	N/A	N/A	2028	No	N/A
102982	Poquoson	South Lawson Park Multi-Use Path	1000' south of Poquoson Avenue	South Lawson Park	Facilities for Pedestrians and Bicycles	N/A	N/A	2028	Yes	N/A
102982	Poquoson	SOUTH LAWSON PARK MULTI-USE PATH			Facilities for Pedestrians and Bicycles	N/A	N/A	N/A	N/A	N/A
102999	Poquoson	Wythe Creek Road Traffic Signal Upgrade	N/A	N/A	Traffic Management/Engineering	N/A	N/A	2028	Yes	N/A
107430	Portsmouth	164 Soundwall Repair	MP 1.5	MP 3.63	Maintenance	N/A	N/A	2028	No	N/A
	Portsmouth	Bike lanes on Churchland Blvd	Portsmouth Trail	High St	Bike Lanes	N/A	N/A	N/A	No	Yes
T21160	Portsmouth	BURTON'S POINT ROAD RECONSTRUCTION			Reconstruction	N/A	N/A	N/A	N/A	N/A
T21182	Portsmouth	EFFINGHAM ST.IMPROVEMENTS AT PORTSMOUTH NAVAL MEDICAL CENTER			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
	Portsmouth	Elm Ave at Navy Gates 29 and 36	N/A	N/A	Intersection Improvements	N/A	N/A	2040	No	Yes

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UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
T21411	Portsmouth	FREDERICK/AIRLINE NEIGHBORHOOD PEDESTRIAN IMPROVEMENTS			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
107035	Portsmouth	George Washington Highway Corridor Improvements	Andrews Street	Mulberry Street	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
107035	Portsmouth	GEORGE WASHINGTON HIGHWAY CORRIDOR IMPROVEMENTS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
	Portsmouth	Hampton Roads Transit Transfer Station Study	N/A	N/A	Transit Study	N/A	N/A	N/A	No	Yes
T21181	Portsmouth	HYMAN STREET AND BALLARD AVENUE IMPROVEMENTS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
100602	Portsmouth	Portsmouth Boulevard/Elmhurst Lane Intersection Improvements	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
110757	Portsmouth	PORTSMOUTH CITYWIDE SIGNAL TIMING - PHASE 1			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21210	Portsmouth	Portsmouth Emergency Vehicle Preemption	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	N/A	Yes	N/A
98824	Portsmouth	Portsmouth Signal Timing Improvements - Phase IV	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
103025	Portsmouth	Portsmouth Traffic Signal Upgrades	N/A	N/A	Traffic Management/Engineering	N/A	N/A	2028	Yes	N/A
103025	Portsmouth	PORTSMOUTH TRAFFIC SIGNAL UPGRADES			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
3950	Portsmouth	Turnpike Road Reconstruction (PE & RW only) - Linked to UPC # 65665	Portsmouth Boulevard	Constitution Avenue	Reconstruction w/o added capacity	N/A	N/A	2018	Yes	N/A
102985	Portsmouth	Westhaven Bicycle Improvements	Clifford St/Powhatan Ave intersection	Airline Blvd/Bart St intersection	Facilities for Pedestrians and Bicycles	N/A	N/A	2028	Yes	N/A
102985	Portsmouth	WESTHAVEN BICYCLE IMPROVEMENTS			Facilities for Pedestrians and Bicycles	N/A	N/A	N/A	N/A	N/A
110990	Portsmouth	WOODROW ST. INSTALL CONCRETE CROSSING SURFACE			Maintenance	N/A	N/A	N/A	N/A	N/A
111338	Smithfield	#SGR RTE. 258BUS OVER CYPRESS CK BRIDGE REPAIR			Maintenance	N/A	N/A	N/A	N/A	N/A
98815	Suffolk	#HB2.FY17 GODWIN BLVD/ROUTE 58 PARK & RIDE LOT			Transit Enhancement	N/A	N/A	N/A	N/A	N/A
100937	Suffolk	#HB2.FY17 ROUTE 58/ HOLLAND ROAD CORRIDOR IMPROVEMENTS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A

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PROJECTS NOT REGIONALLY-SIGNIFICANT

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
111042	Suffolk	#SGR - LAKE CAHOON RD OVER S.C.L (CSX) & N&W (ABANDONED)RAIL			Rail Overpass	N/A	N/A	N/A	N/A	N/A
111040	Suffolk	#SGR - LONGSTREET LANE OVER SOMERTON CREEK			Bridge Replacement	N/A	N/A	N/A	N/A	N/A
T21289	Suffolk	#SGR -ELWOOD ROAD OVER KINGSALE SWAMP			Bridge Replacement	N/A	N/A	N/A	N/A	N/A
T21282	Suffolk	#SGR -FREEMAN MILL ROAD OVER SPIVEY SWAMP			Bridge Replacement	N/A	N/A	N/A	N/A	N/A
T21272	Suffolk	#SGR -PITTMANTOWN ROAD OVER MILL SWAMP			Bridge Replacement	N/A	N/A	N/A	N/A	N/A
T21179	Suffolk	#SGR PRIMARY EXTENSION ROUTE 58 EASTBOUND			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21174	Suffolk	#SGR PRIMARY EXTENSION ROUTE 58 WESTBOUND, SEGMENT 1			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21176	Suffolk	#SGR PRIMARY EXTENSION ROUTE 58 WESTBOUND, SEGMENT 2			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21178	Suffolk	#SGR PRIMARY EXTENSION ROUTE 58 WESTBOUND, SEGMENT 3			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
102991	Suffolk	Bridge Road Traffic Signal Upgrades	College Drive	Eclipse Drive	Traffic Management/Engineering	N/A	N/A	2028	Yes	N/A
102991	Suffolk	BRIDGE ROAD TRAFFIC SIGNAL UPGRADES			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
100604	Suffolk	Bridge Road/Bennetts Pasture Road Intersection Improvements	N/A	N/A	Safety	N/A	N/A	2018	Yes	N/A
100605	Suffolk	Bridge Road/Lee Farm Lane Intersection Improvements	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
111086	Suffolk	CITY OF SUFFOLK CITYWIDE SIGNAL SYSTEM UPGRADE			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
111083	Suffolk	CITY OF SUFFOLK DOWTOWN RAILROAD WARNING SYSTEM			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
111088	Suffolk	CITY OF SUFFOLK DOWTOWN SIGNAL SYSTEM UPGRADE			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21111	Suffolk	City of Suffolk Emergency Vehicle Preemption Development	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
111089	Suffolk	Crittenden Rd / Route 17 Intersection Realignment	N/A	N/A	Intersection improvements	N/A	N/A	2028	No	N/A

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104332	Suffolk	Godwin Blvd / Kings Hwy Intersection Improvements	N/A	N/A	Intersection improvements	N/A	N/A	2028	No	N/A
98815	Suffolk	Godwin Boulevard Park and Ride Lot	N/A	N/A	Transit Enhancement	N/A	N/A	2018	Yes	N/A
100603	Suffolk	Harbour View Signal Timing Improvements	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2018	Yes	N/A
110389	Suffolk	Holland Road Widening - GARVEE Debt Service	N/A	N/A	Debt Service	N/A	N/A	N/A	Yes	N/A
T21590	Suffolk	IMPROVEMENTS AT NON-MEDIAN BREAK INTERSECTIONS	N/A	N/A	Intersection Improvements	N/A	N/A	N/A	N/A	N/A
T21383	Suffolk	MAIN STREET-UPG.TO CANT.FLASHING LIGHTS & 4QD GATES W INTERC			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
107265	Suffolk	Nansemond Pkwy / Bennetts Pasture Rd Intersection Improvements	N/A	N/A	Intersection improvements	N/A	N/A	2028	No	N/A
102990	Suffolk	NASEMOND PARKWAY TRAFFIC SIGNAL UPGRADES			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
99172	Suffolk	North Main Street Multi-Use Trail - Phase II	south entrance of the VDOT District Complex	existing sidewalk on Wal-Mart property	Facilities for Pedestrians and Bicycles	N/A	N/A	2018	Yes	N/A
113126	Suffolk	Pitchkettle Road Realignment	Lake Meade	West Constance Rd	Safety Improvements	2	2	2028	No	N/A
T21186	Suffolk	PRIMARY EXTENSION N. MAIN STREET (US ROUTE 301)			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
107267	Suffolk	PUDEN BLVD/PRUDENCE ROAD INTERSECTION IMPROVEMENTS	N/A	N/A	Intersection improvements	N/A	N/A	N/A	N/A	N/A
59771	Suffolk	Rail-to-Trail (Suffolk Seabord Coastline Trail, part of the South Hampton Roads Trail)	Pughsville Rd	Downtown Suffolk	Shared Use Path	N/A	N/A	N/A	No	Yes
102992	Suffolk	Shoulders Hill Road Multi-Use Path	Bennetts Creek Park Road	1090 ft. south of Bennetts Creek Park Road	Facilities for Pedestrians and Bicycles	N/A	N/A	2028	Yes	N/A
102992	Suffolk	SHOULDERS HILL ROAD MULTI-USE PATH			Facilities for Pedestrians and Bicycles	N/A	N/A	N/A	N/A	N/A
69050	Suffolk	Shoulders Hill Road/Route 17 Intersection Improvements	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
102994	Suffolk	Suffolk Bypass ITS Improvements	N/A	N/A	Traffic Management/Engineering	N/A	N/A	2028	Yes	N/A
102994	Suffolk	SUFFOLK BYPASS ITS IMPROVEMENTS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A

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111036	Suffolk	SUFFOLK BYPASS/GODWIN BLVD - WILROY ROAD - PRUDEN BLVD IMR			Study	N/A	N/A	N/A	N/A	N/A
108983	Suffolk	SUFFOLK CITYWIDE SIGNAL TIMINGS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
	Suffolk	Suffolk Rail Station Study	N/A	N/A	Study	N/A	N/A	N/A	No	Yes
108982	Suffolk	SUFFOLK TRANSPORTATION OPERATION CENTER			Transit Enhancement	N/A	N/A	N/A	N/A	N/A
102990	Suffolk	Traffic Signal Coordination - Nansemond Parkway, Shoulders Hill Road, Wilroy Road	N/A	N/A	Traffic Management/Engineering	N/A	N/A	2028	Yes	N/A
107057	Suffolk	West End Suffolk Bypass IMR Study	N/A	N/A	Study	N/A	N/A	N/A	Yes	N/A
107057	Suffolk	WEST END SUFFOLK BYPASS INTERCHANGE IMR STUDY			Study	N/A	N/A	N/A	N/A	N/A
T21513	Virginia Beach	#SGR VIRGINIA BEACH BOULEVARD MILL AND OVERLAY			Maintenance	N/A	N/A	N/A	N/A	N/A
T21515	Virginia Beach	#SGR VIRGINIA BEACH BOULEVARD MILL AND OVERLAY			Maintenance	N/A	N/A	N/A	N/A	N/A
107064	Virginia Beach	Bus Stop Infrastructure and Accessibility Improvements	N/A	N/A	Transit Enhancement	N/A	N/A	2028	Yes	N/A
108955	Virginia Beach	CORRIDOR RETIMING - KEMPSVILLE RD & NEWTOWN AREA			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
110802	Virginia Beach	DAM NECK ROAD/HOLLAND ROAD INTERSECTION IMPROVEMENTS	N/A	N/A	Intersection improvements	N/A	N/A	N/A	N/A	N/A
	Virginia Beach	First Colonial Rd at Virginia Beach Blvd	N/A	N/A	Intersection Improvements	N/A	N/A	2028	No	Yes
102972	Virginia Beach	First Colonial Road/Laskin Road Intersection Improvements	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
111003	Virginia Beach	HIGH VISIBILITY BACKPLATES ON EXISTING SIGNAL HEADS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
	Virginia Beach	I-264 at Independence Blvd (Study)	N/A	N/A	Study	N/A	N/A	N/A	No	Yes
	Virginia Beach	I-264 at Rosemont Rd (Study)	N/A	N/A	Study	N/A	N/A	N/A	No	Yes
19005	Virginia Beach	I-264 Interchange Improvements at Lynnhaven Parkway - Phase II (PE Only)	N/A	N/A	Reconstruction w/o added capacity	N/A	N/A	N/A	Yes	Completed

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108956	Virginia Beach	INDEPENDENCE BLVD/EDWIN DRIVE INTERSECTION IMPROVEMENTS	N/A	N/A	Intersection improvements	N/A	N/A	N/A	N/A	N/A
110386	Virginia Beach	Indian River Road Widening PH7A - GARVEE Debt Service	N/A	N/A	Debt Service	N/A	N/A	N/A	Yes	N/A
84366	Virginia Beach	Indian River Road/Kempsville Road Intersection Improvements	N/A	N/A	Reconstruction w/o Added Capacity	N/A	N/A	2028	Yes	N/A
51866	Virginia Beach	Kempsville Rd Intersection at Princess Anne Rd	N/A	N/A	New Alignment	N/A	N/A	2018	N/A	Completed
	Virginia Beach	Landstown Rd	Landstown Centre Way	Landstown Rd	Widening	2	4	2028	No	Yes
	Virginia Beach	Level Green Powerline Corridor	Reon Dr	Chesapeake CL at S. Military Hwy	New facility - Shared Use Path	N/A	N/A	2030	No	Yes
	Virginia Beach	Light Rail Corridor Shared-Use Path	Newtown Rd	Norfolk Ave	Shared Use Path	N/A	N/A	N/A	No	Yes
91334	Virginia Beach	Nimmo Parkway Wetland Mitigation Site	N/A	N/A	Environmentally Related	N/A	N/A	2028	Yes	N/A
T21330	Virginia Beach	POTTERS ROAD ROAD DIET			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
108966	Virginia Beach	ROSEMONT RD/SOUTH PLAZA TRAIL INTERSECTION IMPROVEMENTS	N/A	N/A	Intersection improvements	N/A	N/A	N/A	N/A	N/A
	Virginia Beach	Scarborough Bridge Shared Use Path	Magic Hollow Blvd	Old Clubhouse Rd	New facility - Shared Use Path	N/A	N/A	2030	No	Yes
	Virginia Beach	Thalia Creek Greenway Phase - 1D	Constitution Dr	Virginia Beach Bvld	New facility - Shared Use Path	N/A	N/A	2030	No	Yes
108959	Virginia Beach	TRAFFIC ADAPTIVE CORRIDOR IMPLEMENTATION			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
	Virginia Beach	Violet Bank Dr Bike Trail	Kittery Dr	Selwood Dr	New faciilty - Shared Use Path	N/A	N/A	N/A	No	Yes
105622	Virginia Beach	Virginia Beach Blvd / First Colonial Rd Intersection Improvements	N/A	N/A	Intersection improvements	N/A	N/A	2028	No	N/A
111004	Virginia Beach	VIRGINIA BEACH BLVD SIDEWALK			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
T21223	Virginia Beach	Virginia Beach Regional EVP (Opticom) Project	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	2028	Yes	N/A
	Virginia Beach	Virginia Beach Transit Extension North - Phase II Study	Town Center / Independence Blvd	Shore Dr	Transit Study	N/A	N/A	N/A	No	Yes

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	Virginia Beach	Virginia Beach Transit Extension South - Phase III Study	Town Center / Independence Blvd	Virginia Beach Municipal Center	Transit Study	N/A	N/A	N/A	No	Yes
T9108	Virginia Beach	Virginia Beach Transit Extension Study	Newtown Rd Station	Virginia Beach Oceanfront	Transit Study	N/A	N/A	N/A	No	Yes
110806	Williamsburg	#SMART18 - BUS EXPANSION & 3 EXPANSION BUS SHELTERS			Transit Enhancement	N/A	N/A	N/A	N/A	N/A
111022	Williamsburg	#SMART18 - CAPITOL LANDING ROAD AT BYPASS ROAD INTERSECTION	N/A	N/A	Intersection improvements	N/A	N/A	N/A	N/A	N/A
111018	Williamsburg	#SMART18 - IRONBOUND ROAD IMPROVEMENTS - PHASE 2			TWLTL/Other	N/A	N/A	2028	N/A	N/A
111020	Williamsburg	#SMART18 - IRONBOUND ROAD IMPROVEMENTS - PHASE 3			TWLTL/Other	N/A	N/A	2028	N/A	N/A
	Williamsburg	Bypass Rd at Page St at Capitol Landing Rd	N/A	N/A	Intersection Improvements	N/A	N/A	2030	No	Yes
112658	Williamsburg	Capitol Landing Rd Corridor Improvements	Colonial Parkway	Merrimac Trial	Pedestrian Improvements / Streetscaping / Road Diet	4	2	2028	No	N/A
T21086	Williamsburg	CITYWIDE FLASHING YELLOW ARROW			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
89062	Williamsburg	Ironbound Rd / Longhill Rd Intersection Improvements	N/A	N/A	Intersection improvements	N/A	N/A	2028	No	N/A
	Williamsburg	Monticello Ave Shared-Use Path	Treyburn Drive	Ironbound Rd (Rte 615)	Shared Use Path	N/A	N/A	N/A	No	Yes
T21165	York County	CN SIDEWALKS -MERRIMAC, PENNIMAN R, OLD WMSBG, BIG BETHEL RD			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
101276	York County	Cook Rd - Construct Paved Shoulder	North Cook / Surrender Rd	Colonial Pkwy	Safety Improvements	2	2	2028	No	N/A
T21162	York County	FRONTAGE ROAD 171-UNPAVED RD.- TO ADD TO SECONDARY SYSTEM			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21163	York County	POTOMAC RUN STREET EXTENSION -			New Construction	0	2	2028	N/A	N/A
104337	York County	Reconstruct Route 143 Intersection at I-64 EB Ramp Terminal as Roundabout	N/A	N/A	Reconstruction w/o Added Capacity	N/A	N/A	2018	Yes	N/A
111787	York County	Route 17 Widening in Yorktown (PE Only)	Route 630 (Wolk Trap Road)	Route 634 (Old York-Hampton Highway)	Reconstruction w/ added Capacity	N/A	N/A	2028	Yes	Yes
T21321	York County	ROUTE 171 (VICTORY BLVD.) RIGHT TURN LANE EXTENSION			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A

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T21325	York County	ROUTE 60 (POCAHONTAS TRAIL) INTERSECTION LIGHTING			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
T21164	York County	RURAL ADD. - OAKWOOD SUBDIVISION STREETS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
	York County	Shared Use Path Along Yorktown Rd	Cardinal Ln (Rte 670)	Victory Blvd (Rte 171)	Shared Use Path	N/A	N/A	2030	No	Yes
T21166	York County	SIDEWALKS - G, WASHINGTON MEM. HWY, HPTN HWY, HUBBARD LA			Pedestrian Improvements	N/A	N/A	N/A	N/A	N/A
101274	York County	Victory Industrial Park / Add Culverts	350' S of Whites Rd	350' N of Country Ln	SWM improvements	N/A	N/A	2028	No	N/A
T21140	York County	WORMLEY CREEK - COOK ROAD TO EDGEHILL OUTFALL SYSTEM CULVERT			Maintenance	N/A	N/A	N/A	N/A	N/A
T9092	HRT - DRPT	HRT Facility Upgrades	N/A	N/A	Transit Facility Enhancement	N/A	N/A	2018	Yes	N/A
T11777	HRT - DRPT	Purchase 29-ft Replacement Buses	N/A	N/A	Transit Replacement	N/A	N/A	2028	Yes	N/A
T11778	HRT - DRPT	Purchase 40-ft Replacement Buses	N/A	N/A	Transit Replacement	N/A	N/A	2028	Yes	N/A
103974	HRT - DRPT	Purchase Replacement Ferry	N/A	N/A	Transit Replacement	N/A	N/A	2028	Yes	N/A
T9093	HRT - DRPT	Regional Fixed Guideway Studies & ROW	N/A	N/A	Transit Study	N/A	N/A	2018	Yes	N/A
T9093	HRT - DRPT	REGIONAL FIXED GUIDEWAY STUDIES & ROW	N/A	N/A	Transit Study	N/A	N/A	N/A	N/A	N/A
T9126	HRT - DRPT	Transit Vehicles - Bus Replacement and Rebuild	N/A	N/A	Transit Replacement	N/A	N/A	2018	Yes	N/A
T9125	HRT-DRPT	Miscellaneous Transit - Environmental Management Systems	N/A	N/A	Transit Other	N/A	N/A	2018	Yes	N/A
T14104	HRT-DRPT	TRAFFIX Program	N/A	N/A	Transit Operations	N/A	N/A	2028	Yes	N/A
T16054	HRT-DRPT	Transit Bus Replacement	N/A	N/A	Transit Replacement	N/A	N/A	2028	Yes	N/A
T11779	WATA - DRPT	CNG Bus Replacement	N/A	N/A	Transit Replacement	N/A	N/A	2028	Yes	N/A
T11780	WATA - DRPT	Purchase Replacement Buses	N/A	N/A	Transit Replacement	N/A	N/A	2028	Yes	N/A

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T11782	WATA - DRPT	Trolley Bus Replacement	N/A	N/A	Transit Replacement	N/A	N/A	2028	Yes	N/A
T11932	WATA - DRPT	WATA Administration and Operations Facility: Phase 1	N/A	N/A	Transit Facility Enhancement	N/A	N/A	2028	Yes	N/A
110577	Hampton Roads	HRCS Preferred Alternative Refinement	N/A	N/A	Other	N/A	N/A	N/A	Yes	N/A
97175	Hampton Roads	I-264 Downtown Tunnel PPTA	N/A	N/A	Preliminary Engineering	N/A	N/A	N/A	Yes	N/A
76642	Hampton Roads	Midtown Tunnel PPTA	N/A	N/A	Preliminary Engineering	N/A	N/A	N/A	Yes	N/A
103037	Hampton Roads	Midtown Tunnel/Downtown Tunnel/MLK Extension Debt Service - Interstate	N/A	N/A	Debt Service	N/A	N/A	N/A	Yes	N/A
103036	Hampton Roads	Midtown Tunnel/Downtown Tunnel/MLK Extension Debt Service - Primary	N/A	N/A	Debt Service	N/A	N/A	N/A	Yes	N/A
T9588	Hampton Roads District-wide	#SGR HAMPTON ROADS-LOCAL SGR BRIDGE-BALANCE ENTRY			Accounting	N/A	N/A	N/A	N/A	N/A
T9587	Hampton Roads District-wide	#SGR HAMPTON ROADS-LOCAL SGR PAVING-BALANCE ENTRY			Accounting	N/A	N/A	N/A	N/A	N/A
T13919	Hampton Roads District-wide	#SGR HAMPTON ROADS-VDOT SGR BRIDGE-BALANCE ENTRY			Accounting	N/A	N/A	N/A	N/A	N/A
T13509	Hampton Roads District-wide	#SGR HAMPTON ROADS-VDOT SGR PAVING-BALANCE ENTRY			Accounting	N/A	N/A	N/A	N/A	N/A
107046	Hampton Roads District-wide	CURVE ADVISORY SPEED REVIEW			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
103459	Hampton Roads District-wide	DT/MT/MLK Project - Railwork Federal	N/A	N/A	Preliminary Engineering	N/A	N/A	2018	Yes	N/A
103928	Hampton Roads District-wide	GREEN OPERATOR TRUCK REPLACEMENT			Other	N/A	N/A	N/A	N/A	N/A
106724	Hampton Roads District-Wide	Hampton Roads Crossing Study Supplemental EIS	N/A	N/A	Studies Only	N/A	N/A	N/A	Yes	N/A
70715	Hampton Roads District-wide	HAMPTON ROADS DISTRICT REGIONAL STP (RSTP) BALANCE ENTRY			Accounting	N/A	N/A	N/A	N/A	N/A
70714	Hampton Roads District-wide	HAMPTON ROADS MPO CMAQ BALANCE ENTRY			Accounting	N/A	N/A	N/A	N/A	N/A
105492	Hampton Roads District-wide	Hampton Roads Transportation Operations Strategic Plan	N/A	N/A	Study	N/A	N/A	2018	Yes	N/A

*Note: 2018 is tentative pending further EPA guidance and may be replaced by a later first analysis year, such as 2021.

HAMPTON ROADS AMENDED 2040 LONG-RANGE TRANSPORTATION PLAN AND FY 2018-2021 TRANSPORTATION IMPROVEMENT PROGRAM PROJECT CONFORMITY LIST
PROJECTS NOT REGIONALLY-SIGNIFICANT

UPC	Locality	Project Name	From	To	Improvement Type	Existing Lanes	Proposed Lanes	First Analysis Year*	In FY 18-21 TIP	In 2040 LRTP
105368	Hampton Roads District-wide	HRBT Control Room Upgrade Plan (PE Only)	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	N/A	Yes	N/A
109383	Hampton Roads District-wide	I-64 Capacity Improvements - Segment 1 Debt Service	N/A	N/A	Debt Service	N/A	N/A	N/A	Yes	N/A
T17958	Hampton Roads District-wide	IMPROVEMENTS TO ADDRESS ROADWAY DEPARTURE CRASHES			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
111025	Hampton Roads District-wide	INTERSTATE, HIGH TENSION CABLE GUARDRAIL, VARIOUS LOCATIONS			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
109232	Hampton Roads District-wide	ITTF ARTERIAL OPER. IMPRV: US 60, RT 143 & RT 199			Safety/Traffic Opers/TSM	N/A	N/A	N/A	N/A	N/A
77245	Hampton Roads District-wide	Midtown Tunnel PPTA	N/A	N/A	Preliminary Engineering	N/A	N/A	N/A	Yes	Completed
105388	Hampton Roads District-wide	MMMBT Control Room Upgrade Plan (PE Only)	N/A	N/A	Safety/Traffic Opers/TSM	N/A	N/A	N/A	Yes	N/A
109409	Hampton Roads District-wide	PORT OF VIRGINIA - ITS MASTERPLAN FOR HAMPTON ROADS			Study	N/A	N/A	N/A	N/A	N/A
101851	Hampton Roads District-wide	Project Contribution for DT/MT/MLK - Primary	N/A	N/A	Preliminary Engineering	N/A	N/A	N/A	Yes	N/A
99571	Hampton Roads District-wide	PROJECT PRESCOPING - HAMPTON			Study	N/A	N/A	N/A	N/A	N/A
101852	Hampton Roads District-wide	Public Contribution for DT/MT/MLK - Interstate	N/A	N/A	Preliminary Engineering	N/A	N/A	N/A	Yes	N/A
103458	Hampton Roads District-wide	Rail work for DT/MT/MLK project	N/A	N/A	Preliminary Engineering	N/A	N/A	2018	Yes	N/A
103004	Hampton Roads District-wide	Regional Traffic Signal Preemption Plan	N/A	N/A	Traffic Management/Engineering	N/A	N/A	2028	Yes	N/A
109488	Hampton Roads District-wide	SAFETY PRESCOPING - HAMPTON ROADS			Study	N/A	N/A	N/A	N/A	N/A
112053	Hampton Roads District-wide	VPA - EXPANDED BARGE SERVICE			Barge	N/A	N/A	N/A	N/A	N/A
103754	Statewide	Route 460 PPTA Debt Service	N/A	N/A	Debt Service	N/A	N/A	N/A	Yes	N/A
T11802	Statewide	Vehicle Fuel Conversion Program	N/A	N/A	Other	N/A	N/A	2018	Yes	N/A

*Note: 2018 is tentative pending further EPA guidance and may be replaced by a later first analysis year, such as 2021.